Solomon Islands Longline Tuna Fishery

MSC Fishery Assessment Report

Public Certification Report

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Glossary

ABNJ	Areas Beyond National Jurisdiction
B	Biomass
Bcurrent	Average total biomass for recent years
BMSY	Biomass at MSY
C, Clatest	Catch, Latest catch
CCM	WCPFC Commission Members, Cooperating Non-Members and Participating Territories are termed CCMs
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMM	Conservation and Management Measure
CoC	Chain of Custody
CPUE	Catch per Unit Effort
EAFM	Ecosystem Approach to Fisheries Management
EEZ	Exclusive Economic Zone
EPO	Eastern Pacific Ocean
ERA	Ecological Risk Assessment
EU	European Union
ETP	Endangered, Threatened or Protected
F	Parameter for fishing mortality
FAD	Fish Aggregating Device
Fcurrent	Average fishing mortality-at-age for recent years
FFA	Forum Fisheries Agency
FFC	Forum Fisheries Committee
FEP	Fishery Ecosystem Plan
FL	Fork length
FLIM	Fishing Mortality Limit Reference Point
FMSY	Fishing Mortality at MSY
FMP	Fisheries Management Plan
FSM	Federated States of Micronesia
HCR	Harvest Control Rule
HTMC	Harmonized Minimum Terms and Conditions
IFIMS	Industry Fisheries Information Management System (for PNA)
IPOA	International Plan of Action
ISC	International Scientific Committee for Tuna and Tuna like Species in the N. Pacific
ISO	International Standard Organization
ISSF	International Seafood Sustainability Foundation
IUCN	International Union for the Conservation of Nature
IUU	Illegal, Unreported and Unregulated
IW	International waters
LRP	Limit Reference Point
M	Parameter for natural mortality
MCS	Monitoring, Control and Surveillance
MP	Management Plan
MSC	Marine Stewardship Council

MSE	Management Strategy Evaluation
MSY	Maximum Sustainable Yield
NEI	Not Elswhere Indicated
NFD	Non-fishing day
NGO	Non-Government Organisation
NPOA	National Plan of Action
NPTZ	North Pacific Transition Zone
OFP	Offshore Fisheries Program (of the SPC)
P1, P2, P3	The three guiding Principles of the MSC
PAE	Party allowable effort
PASAI	Pacific Association of Supreme Audit Institutions
PCR	Public Certification Report
PI	Performance Indicator
PICT	Pacific Island Country or Territory
PIP	Pacific Island Party (to the USA Treaty)
PITIA	Pacific Islands Tuna Industry Association
PNA	Parties to the Nauru Agreement
PNAO	Parties to the Nauru Agreement Office
PNG	Papua and New Guinea
PRI	Point of Recruitment Impairment
PSA	Productivity Susceptibility Analysis
RBF	Risk-Based Framework
RFMO	Regional Fisheries Management Organisations
ROP	Regional Observer Program
SB	Spawning stock biomass
SBOB	Solomon Islands National Observers Program
SBcurrent	Average spawning biomass over recent years
SBMSY	Spawning biomass at MSY
SC	Scientific Committee (of the WCPFC)
SCS	SCS Global Services
SE	Standard Error
SEAPODYM	Spatial Ecosystem and Population Dynamics Model
SICA	Scale Intensity Consequence Analysis
SIDS	Small Island Developing States
SPC	Secretariat to the Pacific Community
SPREP	South Pacific Regional Environment Programme
SPTT	South Pacific Tuna Treaty (the USA Treaty)
STCZ	Sub-Tropical Convergance Zone
TAC	Total Allowable Catch
TAE	Total Allowable Effort
TCC	Technical Compliance Committee of the WCPFC
TEP	Threatened, Endangered and Protected Species
TFA	Taiwanese Fishing Authority
TRP	Target Reference Point
UNCLOS	United Nations Law of the Sea
UNFSA	United Nations Fish Stocks Agreement

UoA	Unit of Assessment
UoC	Unit of Certification
VDS /LL VDS	Vessel Day Scheme (for purse seiners) / Long line Vessel Day Scheme
VMS	Vessel Monitoring System
VMEs	Vulnerable Marine Ecosystems
WCPFC	Western and Central Pacific Fisheries Commission
WCPO	Western and Central Pacific Ocean

1. Executive Summary

This report presents the Marine Stewardship Council (MSC) assessment of the yellowfin (*Thunnus albacares*) and South Pacific albacore (*Thunnus alalonga*) fishery, harvested by pelagic longlines in the Solomon Islands Exclusive Economic Zone (EEZ), considered to be two Units of Assessment (UoAs). Within the report, the Units of Assessment collectively will be referred to more simply as the Solomon Islands Longline fishery. The assessment was conducted, and the findings were prepared by SCS Global Services (SCS), an MSC accredited, independent, third-party conformity assessment body, in accordance with the MSC Principles and Criteria for sustainable fishing. The assessment complies with the MSC Certification Requirements V2.0 (2014) and the guidance to the Certification Requirements V2.0 (2014).

Table 1. Unit of Certification(s) and Unit of Assessment(s)

Stock/Species (FCR V2.0 7.4.7.1)	Method of Capture (FCR V2.0 7.4.7.2)	Fishing fleet (FCR V2.0 7.4.7.3)
Western and Central Pacific Yellowfin tuna (*Thunnus albacares*)	Pelagic longlines	Vessels flagged to China, Taiwan and Fiji, operating as locally-based vessels chartered by Tri Marine International Pte. Ltd's, National Fisheries Development Ltd. unloading in Noro, Solomon Islands
Western and Central Pacific South Pacific Albacore tuna (*Thunnus alalunga*)	Pelagic longlines	Vessels flagged to China, Taiwan and Fiji, operating as locally-based vessels chartered by Tri Marine International Pte. Ltd's, National Fisheries Development Ltd. and unloading in Noro, Solomon Islands

Fishery Operations Overview

The Solomon Islands Longline Tuna Fishery as assessed here is a commercial fishing operation with between 15 and 19 vessels in recent years, each with approximately 12-16 fishers' onboard, landing in Noro, in the Solomon Islands. These locally-based vessels are flagged to either the Fiji, China or Taiwan. Vessels flagged to China or Taiwan operate under charter arrangements and there is an MoU between the charterer (NFD) and the Solomon Islands Government governing their operations. All vessels operate within the Solomon Islands EEZ using pelagic longlines. Fishing in the waters of the Main Group Archipelago of the Solomon Islands, in the high seas, or the EEZs of other countries is not within the scope of this assessment. The client group for this assessment includes locally-based longline vessels chartered by Tri Marine International Pte. Ltd.'s, National Fisheries Development Ltd or longline vessels flagged to Fiji that fish within the Solomon Islands EEZ. The fleet fishes primarily for yellowfin tuna (*Thunnus albacares*) and the southern stock of albacore tuna (*Thunnus alalonga*). There is also a composite of other species including: bigeye tuna, sailfish, blue marlin, striped marlin, swordfish, and black marlin.

Assessment Overview

The team selected to undertake the assessment includes two team members that collectively meet the requirements for MSC assessment teams. These are:

- Alexander Morison, Team Leader, Principle 1, Principle 2 Expert
- Frank Meere, Principle 3 Expert

The team met with fishery representatives, local staff (Ministry of Fisheries and Marine Resources – MFMR) and regional (Fisheries Forum Agency – FFA) management agencies, in Honiara and Noro in the Solomon Islands, from 11-14 February 2019 and by teleconference with scientists (from the Secretariat for the Pacific Community – SPC) and stakeholders (representatives of the Partners to the Nauru Agreement Office – PNAO) during this site visit. Documents were presented by fishery representatives and fisheries scientists. Client representatives were thorough in their approach and provided the assessment team with supporting documents. The original announcement for the assessment indicated that the Risk based framework (RBF) would not need to be used and this was confirmed from information provided prior to and during the site visit. The assessment proceeded without the RBF. Following the onsite, additional information was provided by the client and management agencies on a range of matters including bait species and sources, compliance records, legislative status of management instruments, and consultation arrangements.

Stakeholders were notified of the onsite visit, invited to speak with the team regarding any concerns and time was scheduled during the onsite to meet with stakeholders. Detailed comments on scoring of WCPFC tuna fisheries were provided by PNAO staff during the teleconference and these were followed up with similar written comments as part of a submission on an assessment of another tuna fishery. These comments have been considered as part of harmonization discussions with representatives of other Conformity Assessment Bodies (CABs). At the PCDR stage, one set of comments was received from International Seafood Sustainability Foundation (ISSF), as well as a Technical Oversight report from MSC. See Background Section 4 for more detail on the assessment process, and for stakeholder submissions and SCS responses see Appendix 3.

Peer Review of the assessment was conducted by Dr. Carola Kirchner and Dr. Johanna Pierre. The assessment team added a condition to 2.3.3 (a,b) and changed the score of 2.2.3 a from SG80 to SG60. During the PCDR stage, there were follow-up questions from Peer Reviewer A, which the team addressed in the Final Report. No scores were changed. See Appendix 2 for more information.

Summary of Findings

In this report, we provide detailed rationales for scores presented for each of the Performance Indicators (PIs) under Principle 1 (Stock status and Harvest strategy), Principle 2 (Ecosystem Impact) and Principle 3 (Governance, Policy and Management system) of the MSC Standard. For both Units of Assessment (UoAs) no PIs failed to reach the minimum Scoring Guidepost (SG) of 60, and the average scores for the three Principles remained above SG 80). The team issued **eleven performance indicator conditions** for three different PIs that did not meet SG 80 level for each of the UoAs. Each UoA in the fishery received two conditions in Principle 1, five conditions in Principle 2, and two conditions in Principle 3. A Client Action Plan, detailed in Appendix 1.3, was produced to meet the conditions.

Overall the strengths of the fishery that were identified are

- fishing must take place within the EEZ (and vessel locations are monitored at all times),
- vessels must unload in port and an effective inspection program is in place,
- license conditions are appropriate and are implemented well so there is effective control of the fleet that is independent of flag state measures,

- the status of the target species is known to be good,
- WCPFC has implemented a comprehensive suite of CMMs but these measures are of less importance to this fishery, and
- MFMR has implemented a conservative limit on the number of vessels and the number of vessel days to manage fishing activity.

The weaknesses that were identified are

- the lack of data on the non-retained catch from observers (or from electronic monitoring yet).
- the harvest strategies at the stock level are not yet fully in place
- the is limited information on the species of bait used and its sources
- consultation arrangements need to be improved, and
- the longline Vessel Day Scheme is less mature than the scheme for purse seine fishing, thus, its ability to respond as needed to any changes in stock status is uncertain.

In Principle 1, two of the PIs (1.1.2 and 1.2.2) received scores under SG 80 for both the yellowfin and albacore UoAs. Both conditions are rooted in a lack of clear harvest control rules linked to the status of the yellowfin and albacore stocks. Scores under Principle 1 are harmonized with several overlapping MSC-certified fisheries targeting yellowfin and albacore in WCPFC waters. For a detailed description of the harmonization process and outcomes, see Background Section 4.1.

In Principle 2, five of the PIs (2.2.1, 2.2.2, 2.2.3, 2.3.2, and 2.3.3) received scores under SG 80 for both the yellowfin and albacore UoAs. Three of the conditions concern the lack of adequate information on the bait used in the fishery and two resulted from the low level of observer coverage that prevents an adequate assessment of whether measures to protect Endangered, Threatened or Protected (ETP) species are being successfully implemented.

In Principle 3, three of the PIs (3.1.2b, 3.2.2b, and 3.2.2d) received a score under SG 80 as a result of a lack of evidence that adequate consultation is taking place. While the Fisheries Management Act 2015 and the Tuna Management and Development Plan provide comprehensive arrangements for consultation a key element – the Fisheries Advisory Council has not met since October 2014.

2. Authorship and Peer Reviewers

2.1 Audit Team

Alexander (Sandy) Morison– Morison Aquatic Sciences – Principle 1 & 2 Expert and Team Lead

Mr. Morison is a consultant specializing in fisheries and aquatic sciences. He has over 30 years' experience in fishery science and assessment at state, national and international levels and has held senior research positions for state and national organizations in Australia. He is currently chair of the Ecologically Related Species Working Group of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) and has been engaged in the Kobe process for harmonization of measures across the tuna RFMOs.

Mr. Morison has considerable experience with issues of tuna and other pelagic species through various positions in addition to his current role with CCSBT. He was Australia's representative on the Science Working Group during the establishment of the South Pacific Regional Fisheries Management Organisation and was the inaugural chair of the Jack Mackerel Working Group during that time. He has also chaired Australia's East Coast Tuna and Billfish Resource Assessment Group.

Mr. Morison has participated as part of a team undertaking MSC pre-assessments for several fisheries and is also trained as a lead auditor for MSC assessments.

- Heard Island and MacDonald Islands Mackerel Icefish: Reassessments and surveillance audits (Principle 1).
- Heard Island and MacDonald Islands Patagonian toothfish: First assessment, reassessment and surveillance audits (Principle 1).
- Lakes and Coorong Fishery (South Australia): Reassessments and surveillance audits (Principle 1).
- Macquarie Island Patagonian toothfish fishery: First assessment, reassessment and surveillance audits (Principle 1).
- Kyoto Danish Seine Fishery: Reassessment (Principle 1).
- Western Rock Lobster Fishery: Surveillance audits and reassessment. (Principle 1)
- PNA Western and Central Pacific unassociated purse seine fishery (skipjack tuna): Surveillance audits (Principle 1).
- PNA Western and Central Pacific unassociated purse seine fishery (yellowfin tuna): Expedited assessment (Principle 1).
- Northeastern Tropical Pacific purse seine yellowfin & skipjack tuna: first assessment (Principle 2).
- Tri Marine Western and Central Pacific skipjack and yellowfin tuna: first assessment (Team leader, Principle 1 and Principle 2).
- Peel-Harvey Inlet, blue swimmer crab and sea mullet fisheries (Principle 1).

- Western Australia deep-sea crab fishery (Principle 1).
- Australian pearl oyster fishery (Principle 1).
- Pre-assessments of three other fisheries (confidential).

Mr. Morison was the facilitator for an assessment of the ecological risks from Queensland's East Coast Trawl Fishery that looked at the full range of ecological components. He was senior author of the report that synthesized background information and the results of an expert workshop and was a co-author of the summary and technical reports that described the results of the project. He was subsequently engaged to assist with an assessment of this fishery's vulnerability to climate change.

Sandy is also contracted by the Australian Fisheries Management Authority to chair the South East Fisheries Resource Assessment Group and the Shark Fisheries Resource Assessment Group, is the Scientific Representative on the South East Fishery Management Advisory Committee and is a member of the South East Scalefish and Shark Fishery Resource Assessment Group. He has also been the scientific representative on other Resource Assessment Groups. Sandy has experience with the assessment of invertebrate, chondrichthyan and teleost fisheries including commercial and recreational fisheries in freshwater, estuarine and marine habitats and fisheries operating in tropical, temperate and polar environments.

He has particular expertise with fish age and growth and has been involved in the development and implementation of harvest strategies for several fisheries. He has over 20 publications in peer-reviewed scientific journals (8 as senior author), 8 book chapters, and over 100 project reports, technical reports, client reports and papers in workshop and conference proceedings.

For more details visit: www.morisonaqsci.com.au

Mr. Morison meets the team leader requirements laid out in FCRV2.0 Annex PC, Table PC1.

Frank Meere– FRM Consulting Pty Ltd– Principle 3 Expert

Frank has extensive fisheries' management and policy expertise underpinned by qualifications in applied economics and has worked in domestic and international fisheries management and policy for more than 30 years. Prior to joining fisheries, Frank worked for the Australian Government for 10 years in a range of other positions and agencies.

In 1989 he joined the Australian Fisheries Service and was involved in the development and drafting of new Commonwealth fisheries legislation and in the early '90s, the establishment of Australian Fisheries Management Authority (AFMA). He worked for more than ten years in key senior positions within AFMA and left the organization in 2003 after five years as its Managing Director. Frank then worked on the High Seas Task Force – a Ministerial Taskforce on IUU fishing on the high seas, for two years where he took prime responsibility for the economics and trade and management and enforcement aspects of the HSTF work and subsequent report.

Frank has extensive international fisheries management experience having served on Australian Government delegations to RFMOs, been involved in the development of new RFMOs, participated as a member of the 2008 Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) performance review panel, in 2017 acted as the independent Chair of the South Pacific Regional Fisheries Management Organisation (SPRFMO) Jack Mackerel Allocation Working Group and

is currently serving as the independent Chair of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) Compliance Committee.

Frank has particular expertise in analyzing and developing practical policy and administrative approaches to complex fisheries management issues and is particularly interested in seeking market-based approaches to management challenges. He is a member of the International Institute of Fisheries Economics and Trade. Frank runs his own consulting company and is active in international fisheries governance (including IUU fishing) and management issues. He is based in Australia and works predominantly overseas.

Together the team meets all competency requirements laid out in Table PC3. Both team members affirm they have no conflict of interest in conducting this assessment.

2.2 Peer Reviewers

The peer reviewers were selected based on their qualifications and competencies, with specific attention to experience in RFMO-managed fisheries, the nature of fishing and fisheries management of distant water fishing fleets, observer programs and fishery monitoring, and stock assessments for tropical tuna species.

For Peer Review College

The Peer Review Draft Report, incorporating the client action plan and conditions, scores, weightings and a draft determination was sent on August 22, 2019 to the MSC Peer Review College.

SCS obtained confirmation from the Peer Review College that the selected peer reviewers did not have any conflicts of interest in relation to the Solomon Islands longline fishery and that the competencies of the peer reviewers match the required competencies for review.

Dr Carola Kirchner

Dr Carola Kirchner is an independent Fisheries Consultant with highly diverse fisheries experience of 22 years, of which she worked 18 years in the Ministry of Fisheries in Namibia. She worked on linefish species (data poor fisheries) where she was involved with biology, data collection and outlining of fisheries regulations for recreational fishers based on length based stock assessment methods. Moreover, she did age-structured stock assessments for all commercial species in Namibia (Orange roughy, Hake, Monk, Sardine, Seals and Horse Mackerel). She is familiar with purse-seine, midwater trawling and bottom trawling fishing methods. For at least 10 years she was responsible for advising management on the sustainable utilization of all commercial resources and the risks attached to these harvesting levels. She designed management procedures and harvest control rules for most of these species. Dr Kirchner is familiar with tuna biology, stock assessment and management through participating in ICCAT meetings. Likewise, she contributed in the Ecosystem Approach to Fisheries steered by the Benguela Current Commission. During 2014-2015 Dr Kirchner worked on contract in the stock assessment and modelling section at the Secretariat of the Pacific Community, where her main role was to support the Parties of the Nauru agreement (PNA) members to maintain the compliance to the MSC certification. In addition, she was working on a regional bio-economic model that aims to evaluate and optimize the various fishing activities and

includes all four major tuna resources in the Pacific as in Skipjack, Yellowfin, Bigeye and Albacore tuna. Dr Kirchner has completed an MBA in 2010, where all her projects were focused on the fishing industry and her thesis involved the estimation of resource rent, fisheries policies and bio-economic modelling of Namibian hake. Dr Kirchner is one of the authors of 30 peer-reviewed publications, 13 of which she has first authorship. These publications range from biology, stock dynamics, environmental indices, stock assessment, fisheries management, fisheries policies, economics and bio-economics of various species.

Dr. Johanna Pierre

Dr Johanna Pierre is a consultant specialising in fisheries and marine management. Her fisheries experience spans more than 15 years and encompasses fisheries management, policy, research, regulation, audit and evaluation. Dr Pierre has conducted pre-assessments, assessments, surveillance audits and peer reviews for Marine Stewardship Council fishery certification processes. She has also assessed and audited fisheries under other frameworks, including Monterey Bay Aquarium's Seafood Watch, and the Commission for the Conservation of Southern Bluefin Tuna's Quality Assurance Review. Her consulting experience also includes a substantial body of work on reducing the environmental effects of commercial fishing, and fisheries reporting and monitoring programmes. Prior to becoming a consultant and forming her company - JPEC Ltd - in 2011, Dr Pierre was a science advisor and then manager of the New Zealand Department of Conservation's Marine Conservation Services Programme. This is focused on managing and mitigating the effects of commercial fishing on marine protected species. She also worked on international science policy and diplomacy with New Zealand's Ministry of Science and Innovation. Dr Pierre has a Ph.D. in environmental biology and ecology from the University of Alberta, Canada, where she worked in the forestry sector and developed her passion for evidence-based natural resource management. She then completed a post-doctoral fellowship in biodiversity science at the University of Tokyo, Japan, sponsored by the Japanese government. Her B.Sc.(Hons I) from the University of Canterbury, New Zealand, focused on ecology.

3. Description of the Fishery

3.1 Unit(s) of Assessment (UoA) and Scope of Certification Sought

3.1.1 UoA and Proposed Unit of Certification (UoC)- Considered Final as Published in the Public Certification Report

The fishery has two UoAs with two target species, South Pacific Albacore Tuna (Thunnus alalonga) and Western and Central Pacific Yellowfin Tuna (Thunnus albacares), captured with the use of pelagic longlines by vessels operating within the Solomon Islands EEZ. The area assessed does not include the Main Group Archipelago (MGA) waters. The vessels in the UoA are flagged to Taiwan, China, or Fiji. The vessels from Taiwan and China are locally-based pelagic longline vessels and operate under charter agreements with local companies. Fijian vessels do not operate under charter agreements but the management regulations when fishing in Solomon Islands EEZ are similar to charter agreements. For this reason, the assessment team elected to score all distinct flag states jointly. Vessels flagged to the Solomon Islands are not included in the assessment. At the time of the assessment, there is only one Solomon Islands flagged longliner licenced, which is not chartered under NFD's licence allocation and hence, falls outside the UoA. There are no other eligible fishers for any of the UoAs so for each one the scope of the UoA and UoC are identical. All catch that is to be eligible to be certified must be landed in the port of Noro in the Western Province of the Solomon Islands.

The two UoAs have a common gear type, catch composition and management system, and only functionally differ in regards to the Principle 1 target stock. Therefore, Principle 2 is scored jointly for the two UoAs, and P1 species of UoA1 and UoA2 are not scored a second time as primary species. Target species that are certified under Principle 1 and has obtained an overall score >80 for P1, will have already be assessed under a higher standard of performance than those for main retained/primary under Principle 2, thus it is expected to obtain a score >80 for the relevant Principal Indicators under P2. If in a subsequent assessment one of the target P1 target species fails and is no longer considered as certified, it will then be scored under Principle 2.

This fishery has been found to meet scope requirements (FCR v2.0 7.4) for MSC fishery assessments as it

- Does not operate under a controversial unilateral exemption to an international agreement, use destructive fishing practices, does not target amphibians, birds, reptiles or mammals and is not overwhelmed by the dispute. (FCR 7.4.1.1, 7.4.1.2, 7.4.1.3, 7.4.2)
- The fishery does not engage in shark finning, has mechanisms for resolving disputes (FCR 7.4.2.1), and has not previously failed assessment or had a certificate withdrawn.
- Is not an enhanced fishery, is not based on an introduced species and does not represent an inseparable or practically inseparable species (FCR 7.4.3, 7.4.4, 7.4.13-15)
- Does not overlap with another MSC certified or applicant fishery (7.4.16),
- The UoA does overlap with several MSC certified or applicant fishery (7.4.16), and therefore harmonization requirements are applicable. (see Section 4.1 for more detail).
- And does not include an entity successfully prosecuted for violating forced labor laws (7.4.1.4)

- The Unit of Assessment, the Unit of Certification, and eligible fishers have been clearly defined, traceability risks characterized, and the client has provided a clear indication of their position relative to certificate sharing (7.4.6-7.4.12).

Table 2. Units of Assessment (UoA) and Unit of Certification (UoC).

Unit of Assessment 1	
UoA: Species & Stock (FCR V2.0 7.4.7.1)	Yellowfin tuna (*Thunnus albacares*)
UoA: Gear Type (FCR V2.0 7.4.7.2)	Pelagic longlines
UoA: Vessels (FCR V2.0 7.4.7.3)	Vessels flagged to China, Taiwan, and Fiji, operating as locally-based vessels under charter agreements with National Fisheries Developments (NFD)and unloading in Noro, Solomon Islands
Further information: Geographic Area	Solomon Islands EEZ (excluding Main Archipelagic Group waters)
Further information: Management System	The SI longline fishery operating within the EEZ is managed by the SI Ministry of Fisheries and Marine Resources (MFMR), in addition to the WCPFC and PNA (Longline VDS).
Unit of Certification 1	
Client Group	National Fisheries Developments Ltd
Fishers in the UoC for the chosen stock	All UoA fishers.
Other Eligible Fishers that may join the certificate for the chosen stock	None
Units of Assessment 2	
UoA: Species & Stock (FCR V2.0 7.4.7.1)	South Pacific Albacore (*Thunnus alalonga*)
UoA: Gear Type (FCR V2.0 7.4.7.2)	Pelagic longlines
UoA: Vessels (FCR V2.0 7.4.7.3)	Vessels flagged to China, Taiwan and Fiji, operating as locally-based vessels under charter agreements with National Fisheries Developments (NFD)and unloading in Noro, Solomon Islands
Further information: Geographic Area	Solomon Islands EEZ (excluding Main Archipelagic Group waters)
Further information: Management System	The SI longline fishery operating within the EEZ is managed by the SI Ministry of Fisheries and Marine Resources (MFMR), in addition to the WCPFC and PNA (Longline VDS).
Unit of Certification 2	
Client Group	National Fisheries Developments Ltd
Fishers in the UoC for the chosen stock	All UoA fishers.
Other Eligible Fishers that may join the certificate for the chosen stock	None

Table 3 Vessels in the UoA that are flagged to China, Taiwan and Fiji, operating as locally-based vessels under charter agreements with National Fisheries Developments (NFD) and unloading in Noro, Solomon Islands.

Vessel Name	Flag state registration number	Flag
San Sheng Shiang No. 668	CT4-2706	Taiwan
Shuenn Shing No.66	CT4-2955	Taiwan
Yi Siang No.6	CT4-3031	Taiwan
Yi Siang No.8	CT4-3098	Taiwan
Yi Siang No.1	CT4-3115	Taiwan
Yu Shun No.168	CT4-2973	Taiwan
Lu Rong Yuan Yu 799	(LU)CHUANDENG (JI)(2018) FT-200060	China
Jhan Hong Cai	CT4-2341	Taiwan
Hong Rong	CT4-3011	Taiwan
Gui Yuan Yu 60002	(YUE)CHUANDENG(JI)(2017) FT-100031	China
Gui Yuan Yu 60003	(YUE)CHUANDENG(JI)(2017) FT-100029	China
Gui Yuan Yu 60005	(YUE)CHUANDENG(JI)(2017) FT-100028	China
Gui Yuan Yu 60006	(YUE)CHUANDENG(JI)(2017) FT-100030	China
E Sun No.888	CT5-1692	Taiwan
E Sun No.999	CT6-1424	Taiwan
Fu Yu No.8	CT4-3113	Taiwan
Yu Shun 2	(YUE)CHUANDENG(JI)(2015)FT-200001	China
Yu Shun 66	(YUE)CHUANDENG(JI)(2015)FT-200002	China
Kuo Rong No.8	CT4-3089	Taiwan
Yu Shun No.8	CT4-3021	Taiwan
Yu Shun No.88	CT4-3091	Taiwan
Yu Shun No.668	CT4-3088	Taiwan
Yu Shun No.888	CT4-2936	Taiwan
Fu Bon No. 66	CT4-3020	Taiwan
Yu Shun	CT4-3024	Taiwan
Rising No.8	000822	Fiji
Rising No.9	000823	Fiji
Rising No.16	001123	Fiji
Rising No.18	001124	Fiji
Rising No.28	001126	Fiji
Fu Bon No. 99	BJ5089	Taiwan

3.1.2 Final UoC(s)

Total Allowable Catch (TAC) and Catch Data

Table 4. Total catch and total catch by longlines, for the WCPFC Convention Area (CA); catch for the UoAs combined, and UoAs' catch as a % of the total WCPFC catch and WCPFC longline catch for both Albacore and Yellowfin tuna (2013-2017) (Data for WCPFC-CA from SPC-OFP 2018; data for UoAs from SPC).

Year	Albacore					Yellowfin				
	WCPFC-CA	WCPFC Longlines	Flag states combined			WCPFC-CA	WCPFC Longlines	Flag states combined		
	Total catch (t)	Total catch (t)	Catch (t)	% of Total WCPFC	% of WCPFC Longline	Total catch (t)	Total catch (t)	Catch (t)	% of Total WCPFC	% of WCPFC Longline
2013	137,770	97,970	1,222	0.9%	1.2%	557,807	77,204	537	0.1%	0.7%
2014	121,705	86,980	1,437	1.2%	1.7%	598,585	99,707	946	0.2%	0.9%
2015	118,370	92,544	1,091	0.9%	1.2%	583,490	103,132	1272	0.2%	1.2%
2016	99,410	77,808	595	0.6%	0.8%	643,670	89,028	777	0.1%	0.9%
2017	117,969	96,280	416	0.4%	0.4%	670,890	83,399	628	0.1%	0.8%

3.1.4 Scope of Assessment in Relation to Enhanced Fisheries

There is no evidence of enhancement in this fishery.

3.1.5 Scope of Assessment in Relation to Introduced Species Based Fisheries (ISBF)

There is no evidence of introduced species in this fishery.

3.2 Overview of the Fishery

3.2.1 Location and History of the Fishery

Purse-seine, pole and line, and pelagic longline gears are used to target tuna within Solomon Islands waters. The prominence of these gears regarding contribution to the total catch within the Solomon Islands waters has shifted over time (WCPFC, 2018). The Solomon Islands longline fishery began in the mid-1990s, whereas the pole and purse seine fisheries began in the 1970s and 1980s, respectively.

Total longline catches currently represent 7% of all catches from commercial tuna fisheries (foreign and domestic) in the SI EEZ (WCPFC, 2018). Longline effort toward yellowfin and albacore in the Solomon Islands has been increasing since the inception of the fishery. For much of the history of the fishery, there were no catch or effort restrictions in place. However, in 2016, controls on the number of days (LL VDS) scheme were implemented for the longline fishery. The total number of LL VDS days used for the entire chartered longline fishery was 9,663 fishing days (WCPFC, 2017).

Historically for management purposes, vessels were either domestic (i.e. locally-based foreign or SI chartered) or under bilateral agreements, with most boats from Japan, Korea, China, and Taiwan. Currently, the entire SI longline fleet consists of foreign owned, locally-based vessels from China, Taiwan or Vanuatu operating under charter agreements held by four companies. Fijian vessels operate under bilateral instead of charter agreements, however, all management regulations—excluding landing requirements—are the same across these foreign longline vessels operating as locally based.

3.2.2 Organization and User Rights

The Solomon Islands fishery for yellowfin and albacore occurs within the EEZ. Management of tuna fisheries across the WCPO involves a complex mix of national and international bodies and agreements. For the purpose of this section, the key components of the governance and fishery management framework at the regional level are:

- the Western Central Pacific Fisheries Commission (WCPFC), the Regional Fisheries Management Organisation (RFMO) for the Western and Central Pacific Ocean;
- the Parties to the Nauru Agreement (PNA) by virtue of the use of the Palau Arrangement for the Management of the Western Pacific Tuna Fishery - Management Scheme known as the PNA Longline Vessel Day Scheme (LL VDS); and

at the national level:

- the Solomon Islands Government; and
- the flag States of China, Taiwan and Fiji (the flags of the vessels chartered to NFD).

3.2.3 Description of pelagic longlines

Pelagic longline gear is used throughout the world's oceans to capture tuna and tuna-like species. Longline gear is typically deployed from a single vessel across many miles of ocean. The vessel deploys a single mainline that is periodically buoyed with floatation devices and thinner branch lines (also called snoods and may include a leader of different material) with baited hooks are then attached to the mainline between the floats (Curran 2014) (Figure 1). In the Solomon Islands longline fishery, vessels must not use or carry wire traces as branch line or leaders (which are more likely to catch sharks) and must also not use branch lines running directly off the longline floats or drop lines, known as shark lines. Only large circle hooks are used (Figure 2) to reduce the bycatch of turtles.

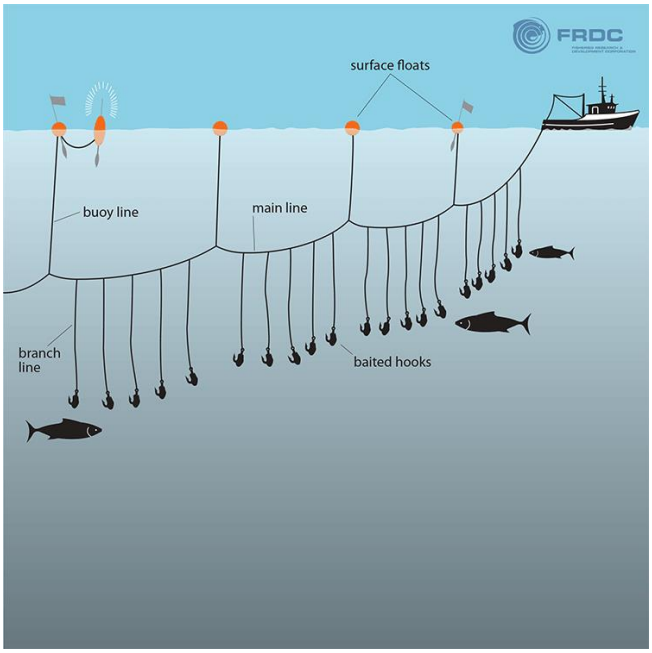

Figure 1. Illustration of a surface longline (from https://fish.gov.au/Fishing-Methods/Hook-and-line)

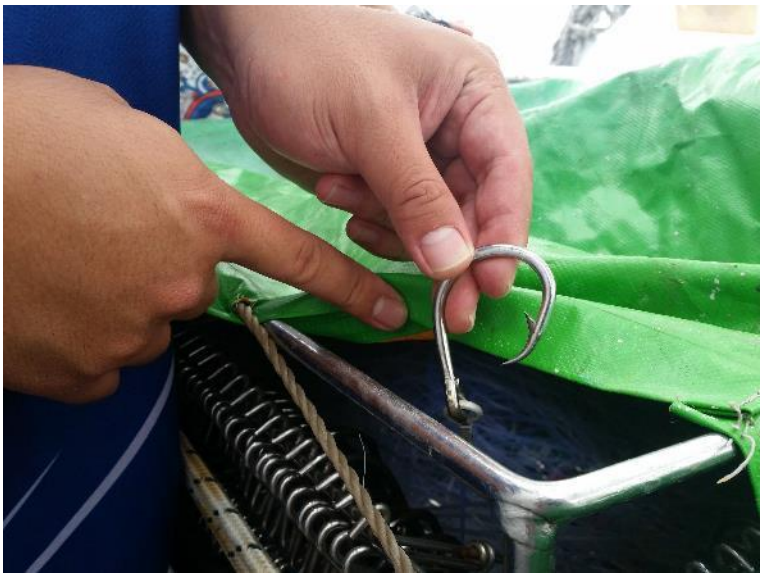

Figure 2. Example of a circle hook used in the longline fishery.

3.2.4 Areas & Seasons

The Solomon Islands longline fishery operates only with the EEZ of the Solomon Islands. These tropical waters generally have higher levels of fishing effort (by hooks) than those at higher latitudes but lower than some areas to the west (Figure 3). Within the Solomon Islands EEZ, fishing for yellowfin tuna generally occurs closer to the equator (0-10°S) than fishing for albacore, which more commonly occurs at lower latitudes. There is no clear fishing season for the Solomon Islands longline fishery.

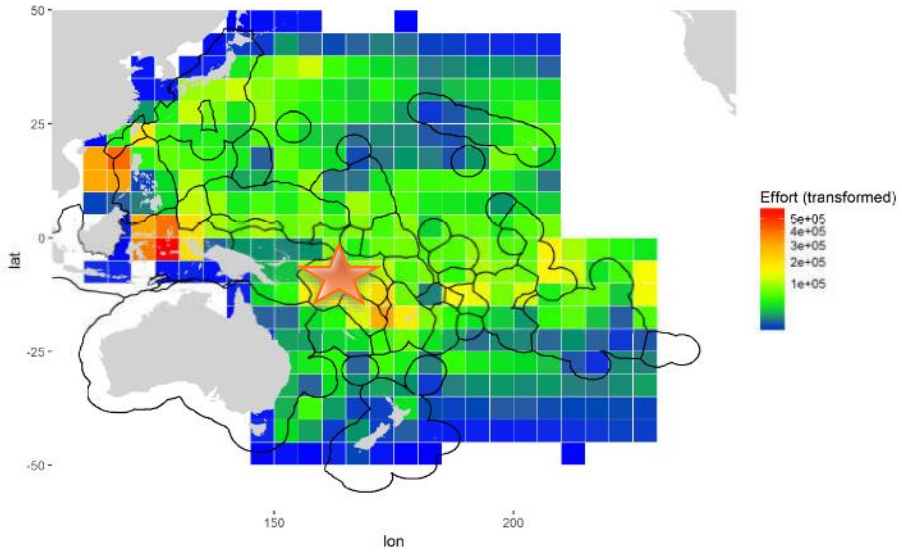

Figure 3. Total reported fishing effort in number of hooks (square root transformed) for longliners during the 2003-2016 time period in the WCPFC-CA (from Peatman et al. 2018). The Solomon Islands EEZ is marked with the star.

3.3 Principle One: Target Species Background

3.3.1 Yellowfin tuna

Taxonomic classification

Class: Actinopterygii

Order: Perciformes

Family: Scombridae

Genus: *Thunnus*

Species: *albacares*

Behaviour

Yellowfin tuna is a large, schooling tuna, common in surface waters of tropical and sub-equatorial oceans (Molony 2008). Tagging with acoustic transmitters or ultrasonic tags has shown yellowfin spend a majority of their time in the upper mixed layer of the ocean (less than 100 m) and typically in temperatures above 17–18°C (Molony 2008).

Yellowfin tuna feed on other fish, crustaceans and squid. Their trophic level has been estimated at 4.4 ± 0.4 SE. They are not a low trophic level species.

Growth and Natural Mortality

Growth in length for yellowfin tuna is estimated to continue throughout their life (Figure 4). The estimated mean length of the final age-class is 153.4 cm but the maximum fork length is over 200 cm.

Natural mortality is estimated to vary with age and by sex. The generally increasing proportion of males in the catch with the increasing size is assumed to be due to an increase in the natural mortality of females, associated with sexual maturity and the onset of reproduction. The assessment model used fixed externally-estimated values for natural mortality-at-age but also examined the sensitivity to estimating this during the model fitting process.

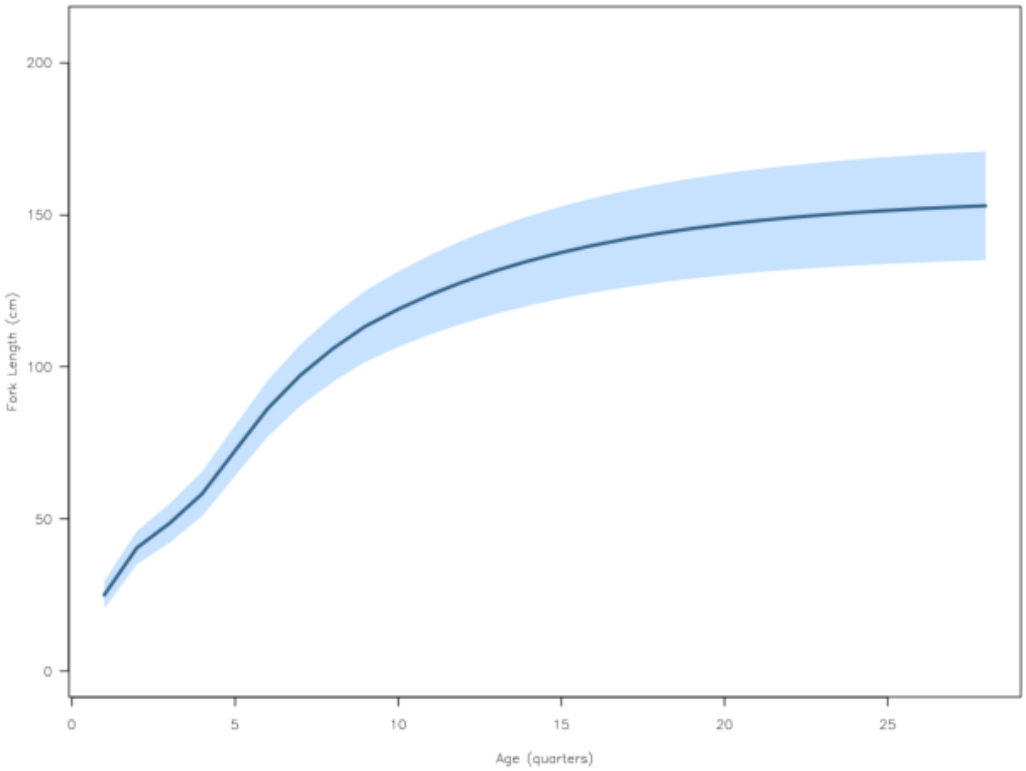

Figure 4. Yellowfin tuna: estimated growth for the diagnostic case model. The blue line represents the estimated mean fork length (cm) at-age and the blue region represents the length-at-age within one standard deviation of the mean, for the diagnostic case model (from Tremblay-Boyer et al. 2017).

Reproduction and Recruitment

Yellowfin tuna start to mature at 5 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 5). Spawning occurs throughout the year in the core areas of distribution, but peaks are always observed in the northern and southern summer months respectively. Individuals may spawn every few days over the spawning period. Larval distribution in equatorial waters is transoceanic the year round but there are seasonal changes in larval density in subtropical waters.

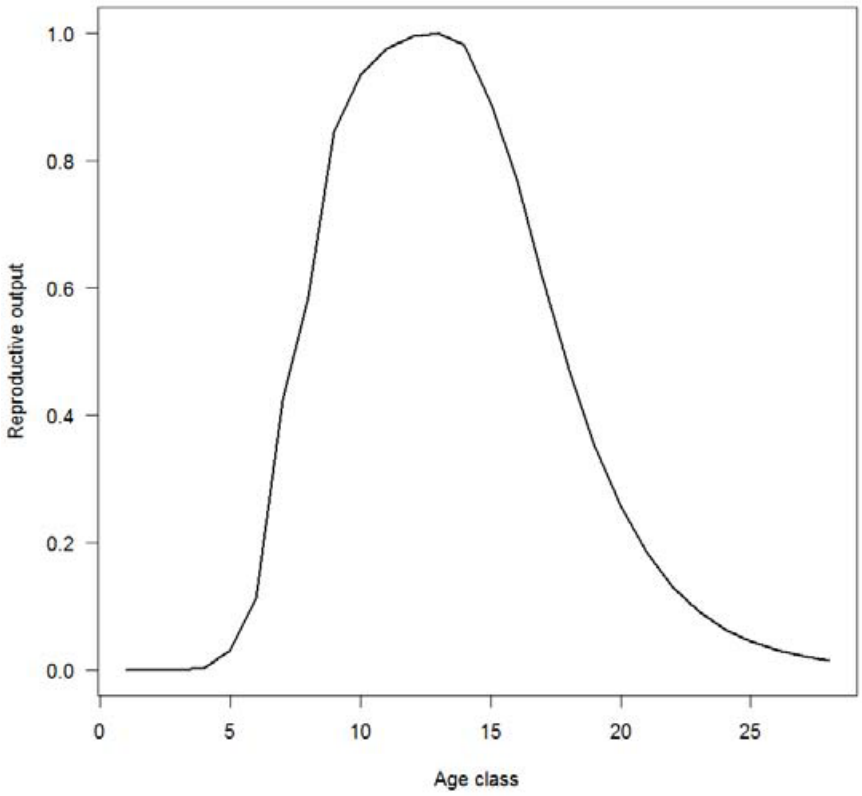

Figure 5. Yellowfin tuna: Index of spawning potential incorporating information on sex ratios, maturity at age, fecundity, and spawning fraction (from Davies et al. 2014).

Distribution and Stock Structure

Yellowfin tuna are found worldwide in tropical and subtropical seas. The thermal boundaries of occurrence are roughly 18° and 31°C.

Although the distribution of yellowfin tuna in the Pacific is nearly continuous, lack of evidence for long-ranging east-west or north-south migrations of adults suggests that there may not be much exchange between the yellowfin tuna from the eastern and the central Pacific, nor between those from the western and the central Pacific (Figure 6). This suggests the existence of subpopulations and although early publications have suggested limited variation within the Pacific (Ward et al. 1994), recent studies with improved techniques have suggested a finer scale genetic stock structure (Aguila et al. 2015; Grewe et al. 2015; Grewe et al. 2016) that is not considered within the current stock assessment (Tremblay-Boyer et al. 2017).

Nevertheless, for the purpose of WCPFC yellowfin stock assessments, the stock within the domain of the model area (essentially the WCPO, west of 210°E) has been considered as a discrete stock unit (Davies et al. 2014). This area has been disaggregated into model regions (Figure 6) so as to describe to some extent spatial processes (such as recruitment and movement) and fishing mortality within regions (Tremblay-Boyer et al. 2017).

There is a large amount of tagging data (1989-2012) which indicates extensive latitudinal movements among the equatorial regions but also a level of longitudinal movements to and from the sub-tropical latitudes (Figure 7). The movement of tagged fish among regions is used in the stock assessment to estimate movement coefficients among different regions. A new regional structure proposed for the current stock assessment, with region boundaries shifted from 20° N to 10° N, was suggested by the PAW based on few movements between tropical tag release sites and temperate zones for bigeye tuna (McKechnie et al. 2017a).

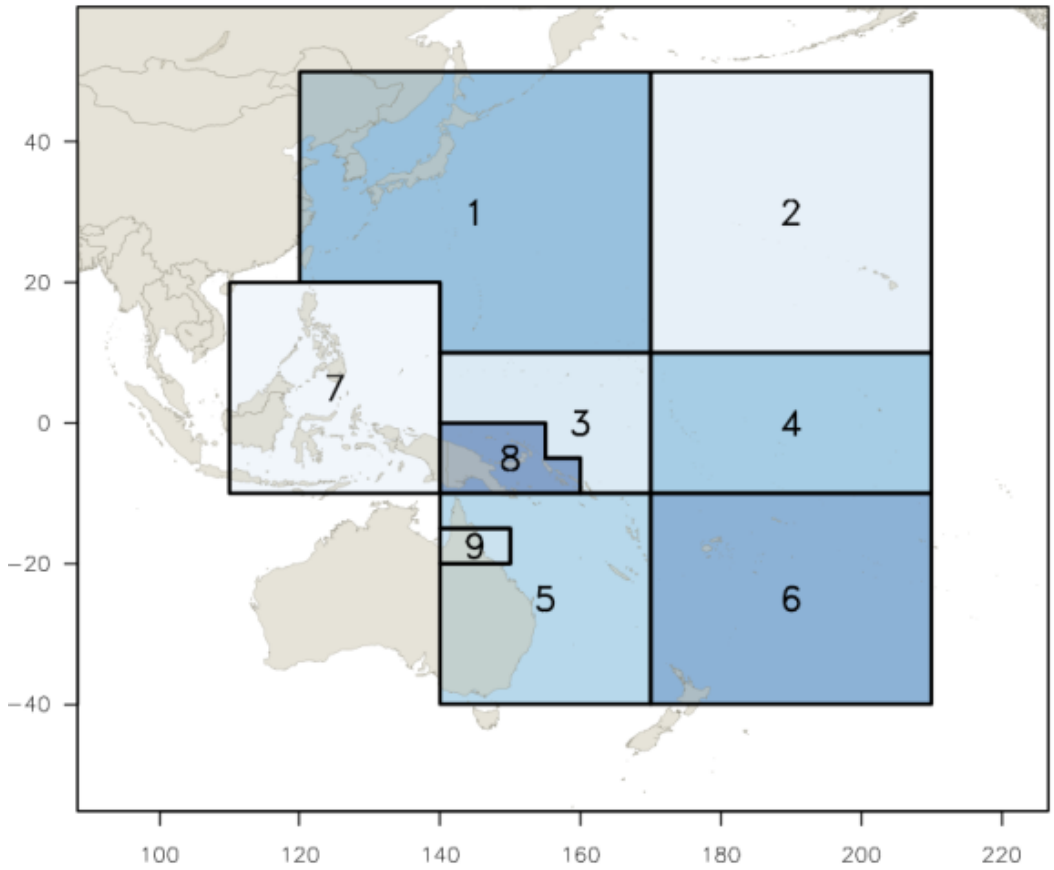

Figure 6. Yellowfin tuna: the geographical area covered by the stock assessment and the boundaries for the 9 regions when using the "2017 regional structure" (from Tremblay-Boyer et al. 2017).

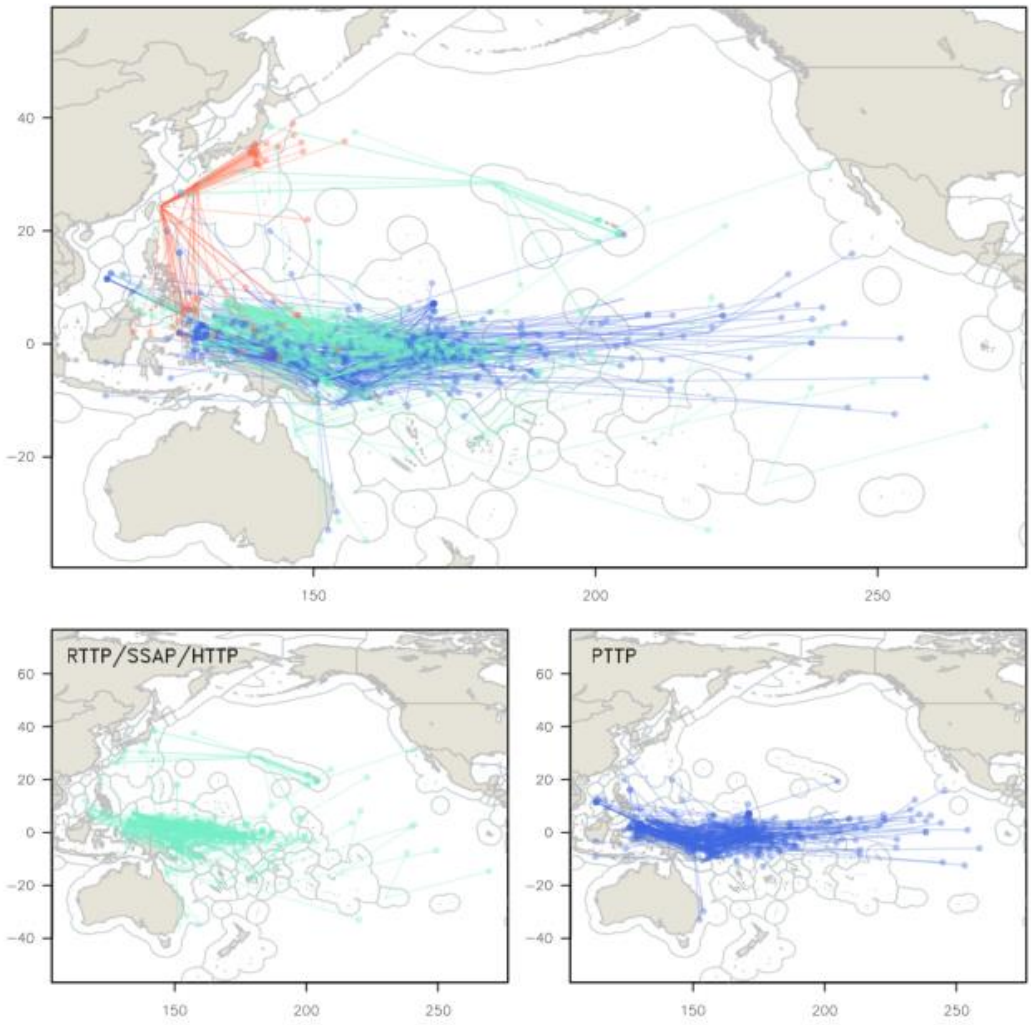

Figure 7. Map of the movements of tagged yellowfin tuna released in the Pacific Ocean and subsequently recaptured more than 1,000 nautical miles from their release site. Plots represent recaptures from different tuna tagging programs. (from Tremblay-Boyer et al.2017).

Catch

The catch by the UoA is shown in Figure 8. The total catch from the whole stock, as used in the most recent stock assessment, shows the continued dominance of catches by purse seines (Figure 8). This catch has been taken from all the regions used in the assessment, and the relative importance of each region has varied over time (Figure 9), (the location of modeled regions are shown in Figure 9).

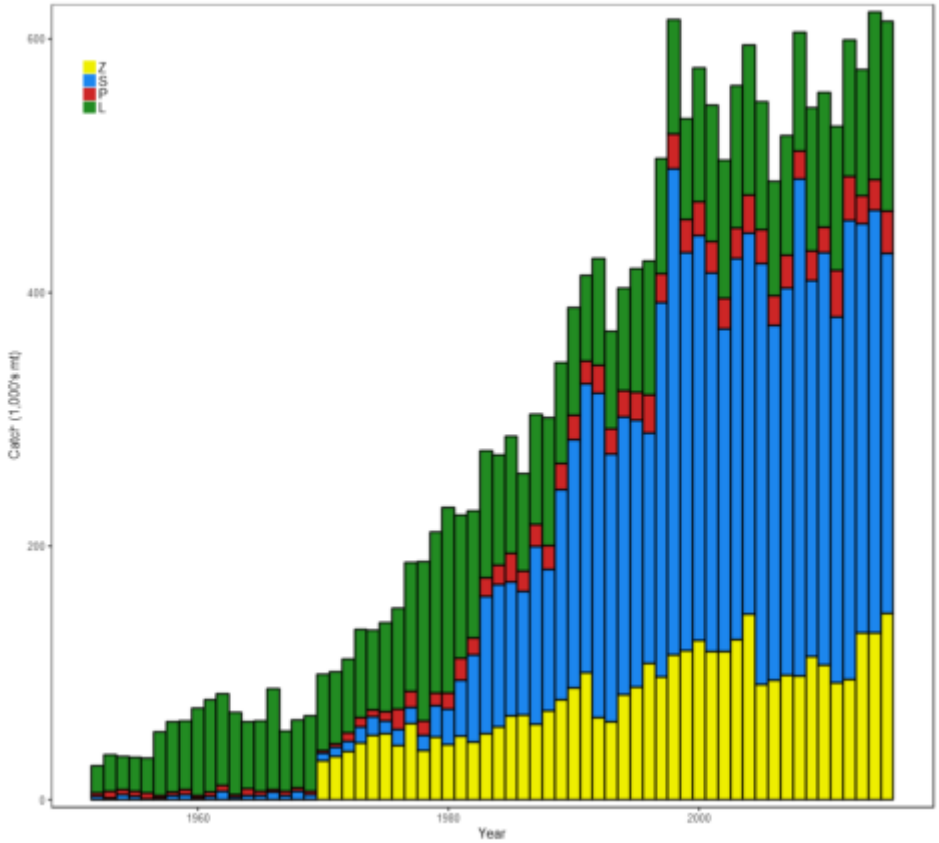

Figure 8. Yellowfin tuna: time series of total annual catch (1000's mt) by fishing gear for the diagnostic case model over the full assessment period. The different colors refer to longline (green), pole-and-line (red), purse seine (blue) and miscellaneous (yellow). Note that the catch by longline gear has been converted into catch-in-weight from catch-in-numbers and so estimates differ from the annual catch estimates presented in (Williams and Terawasi, 2017), however, these catches enter the model as catch-in-numbers (from Tremblay-Boyer et al. 2017).

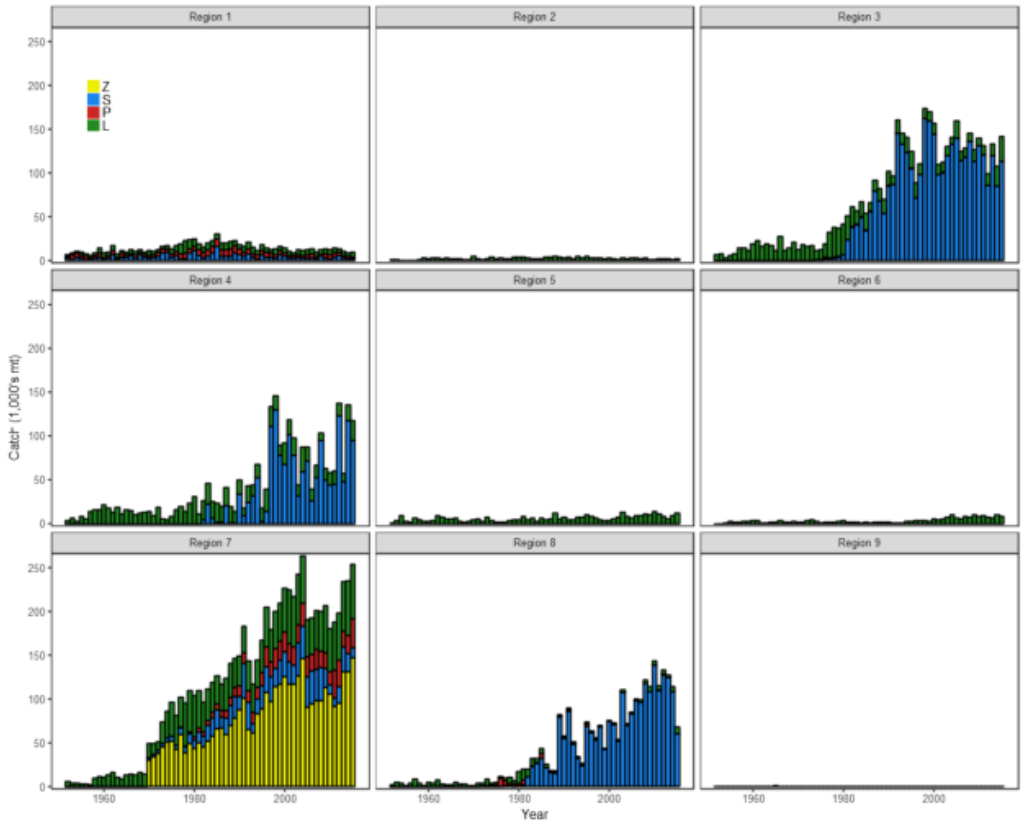

Figure 9. Yellowfin tuna: time series of total annual catch (1000's mt) by fishing gear and assessment region from the diagnostic case model over the full assessment period. The different colors denote longline (green), pole-and-line (red), purse seine (blue) and miscellaneous (yellow) (from Tremblay-Boyer et al. 2017).

Stock assessment

Stock assessments for yellowfin tuna have been conducted regularly and almost annually since 1999. Furthermore, an independent review of the 2011 bigeye tuna assessment (Lanelli et al. 2012) had several recommendations for improvement that apply equally to the yellowfin assessment, and these have been incorporated into the current assessment wherever possible.

The assessment model is run in Multifan-CL (MFCL), which provides a Bayesian framework. MFCL requires that 'fisheries' are defined with as near as possible constant selectivity and catchability. For each fishery, the assessment uses catch data, effort data (in the form of standardised CPUE time series), time series of size data, externally estimated growth functions, and tagging data. The model can be considered to consist of several components, (i) the dynamics of the fish population; (ii) the fishery dynamics; (iii) the dynamics of tagged fish; (iv) the observation models for the data; (v) the parameter estimation procedure; and (vi) stock assessment interpretations. Detailed technical descriptions of components (i)–(iv) are given in Hampton and Fournier (2001) and Kleiber et al. (2017).

Age / spatial structure: The model is structured into 9 regions and 28 quarterly age classes (the last a plus group).

Growth: Growth was assumed to be invariant by region and sex. It has been noted that growth of smaller fish (up to ~80cm) may not conform to a von Bertalanffy (VB) curve, so the mean length of

the first 8 quarterly age-classes were set as independent parameters, with the mean lengths for the remaining age-classes following a VB growth model.

Steepness: Fixed at 0.8, with 0.65 and 0.95 tested as sensitivities (as all the main WCPFC tuna stocks).

Recruitment: Recruitment occurs in the model at age one, instantaneously at the beginning of each quarter. The stock-recruit relationship is considered weak (i.e. weak penalty for deviating from it); the six terminal quarterly recruitments are set at the mean of assessment period; the distribution of recruitment across regions is allowed to vary over time.

Natural mortality: M assumed to vary between males and females (because there is a larger proportion of males in the largest size classes); M is calculated externally by length and then converted to M-at-age using the growth curve; this M vector is put into the model as fixed values.

Maturity: The assessment estimates 'spawning potential' rather than spawner biomass, with the objective of estimating directly the relevant contribution to the next generation. This is a function of sex ratio at age, female maturity at age, female spawning frequency at age and female fecundity at age. As for M, this function is calculated by length and then back-transformed to age using the growth function.

Selectivity: Modelled using a variety of functions and methods (cubic spline smoothing, logistic function), depending on the fishery. Fisheries can 'share' selectivity if their characteristics are similar, to reduce the number of model parameters

Catchability: Constant catchability is assumed for fisheries where there is standardised CPUE (i.e. the model assumes that standardised CPUE is an index of abundance); otherwise catchability is allowed to vary over time (every 2 years).

The most recent assessment (Tremblay-Boyer et al. 2017) was an update of the previous assessment (Davies et al. 2014) but also addressed relevant recommendations of that assessment report, including an investigation of an alternative regional structure, exploration of uncertainties in the assessment model, particularly in response to the inclusion of additional years of data, and improving diagnostic weaknesses of previous assessments. It used data from 1952 to 2015, in quarterly timesteps; 2016 data being too preliminary at the time of assessment.

In addition to the diagnostic case model, it reported the results of one-off sensitivity models to explore the relative impacts of key data and model assumptions for the diagnostic case model on the stock assessment results and conclusions. It also undertook a structural uncertainty analysis (model grid) for consideration in developing management advice where all possible combinations of the most important axes of uncertainty from the one-off models were included. The grid contains all combinations of two or more parameter settings or assumptions for each uncertainty axis. The axes are generally selected from the one-off sensitivities with the aim of providing an approximate understanding of variability in model estimates due to assumptions in model structure, not accounted for by statistical uncertainty estimated in a single model run, or over a set of one-off sensitivities. The structural uncertainty grid for the 2017 assessment was constructed from 5 axes: steepness (3 settings), tagging data overdispersion (2), tag mixing (2), size data weighting (3) and regional structure (2). Initially the grid consisted of 48 models as only two size weighting had been

applied, subsequently a third was added (see under 'sensitivities' below), so the final grid comprised 72 model runs.

In comparison to previous assessments, less emphasis was placed on the diagnostic case model. Instead, Tremblay-Boyer et al. (2017) recommended that management advice be formulated from the results of the structural uncertainty grid and a selection of 48 of the 72 runs were selected by the SC as the basis for this advice (Table 5, Figure 13). In this selection of runs, the lower 10 percentiles for $SB_{latest}/SB_{F=0}$ and $SB_{recent}/SB_{F=0}$ were 1.02 and 1.05 respectively, indicating that the stock was close to the point at which there would no longer be a high degree of certainty (95% probability) that it was still above the LRP of 20% $SB_{F=0}$.

Across the range of model runs in this assessment, the key factor influencing estimates of stock status was the size data weighting value. Down-weighting the influence of the size data led to more pessimistic stock status estimates.

Based on the results of the model grid, the general conclusions were:

1. The grid contained a wide range of models with some variation in estimates of stock status, trends in abundance and reference points. However, biomass was estimated to have declined throughout the model period for all models in the grid. Those declines were found across most tropical and temperate regions of the model.
2. Across the model grid, the terminal depletion estimated for the majority of runs estimates stock status levels to be above the 20% SB F=0 . The range of SB latest /SB F=0 values was 0.18 to 0.45. Only two runs (<5%) fell below the LRP of 20% SB F=0 . The median estimate (0.33) was comparable to that estimated from the 2014 assessment grid, noting the differences in grid uncertainty axes used in the two assessments.
3. Corresponding estimates of F recent /F msy ranged from 0.58 to 1.13, with 2 out of the 48 runs (<5%) indicating that F recent /F msy > 1. The median estimate (0.75) was also comparable to that estimated from the 2014 assessment grid.
4. Fishing mortality for adult and juvenile yellowfin tuna was estimated to have increased continuously since the beginning of industrial tuna fishing (seen in the diagnostic case model). In general these had been on average higher for juveniles, but in recent years adult fishing mortality had also increased. A significant component of the increase in juvenile fishing mortality was attributable to the Philippines, Indonesian and Vietnamese surface fisheries, which have the most uncertain catch, effort and size data. The work of the WPEA project to assist in enhancing the current fishery monitoring programme and improving estimates of historical and current catch from these fisheries remains important given the contribution of these fisheries in the overall fishing impact analyses from this assessment.
5. The significance of the recent increased recruitment events and the progression of these fish to the spawning potential component of the stock were encouraging, although whether this was a result of management measures for the fishery or beneficial environmental conditions was currently unclear. It was noteworthy, however, that recent favourable recruitment events had also been estimated for skipjack (McKechnie et al., 2016a, 2016b) and bigeye (McKechnie et al., 2017a) in the WCPO, and bigeye in the EPO (Aires-da Silva et al., 2017), which may give weight to the favourable environmental conditions hypothesis. Whether

these trends are maintained in coming years will help separate these factors and will likely provide more certainty about the future trajectories of the stock.

6. There remained a range of other model assumptions that should be investigated either internally or through directed research. Briefly, the apparent non-linear impact of the weighing on the size composition data on population estimates, and the conflict between the abundance indices and the tagging data for region 8 were worthy of note. Also, biological studies to improve our estimates of growth of yellowfin within the WCPO, for instance through direct ageing of otoliths as was done in bigeye, should be considered a high priority.

The impact of longline fishing is important, but it is spatially variable and has declined in recent years (Figure 11). Over the period 1965-2014, recruitment on average displays very little trend and the uncertainty decreases substantially since the mid 1965s (Figure 12). Biomass has declined steadily over the model period but in the most recent years, that decline has slowed, and shows a small increase in the last two years (Figure 11). Although the age-specific selectivity patterns produce a much higher MSY in the early period of the fishery compared to the recent estimates, the catch has always been less than MSY (Figure 14).

Table 5. Yellowfin tuna: Summary of reference points over the 48 models in the structural uncertainty grid retained for management advice using divisors of 20 and 50 for the weighting on the size composition data. Note that SBrecent/SBF=0 is calculated where SBrecent is the mean SB over 2012-2015 instead of 2011-2014 (used in the stock assessment report), at the request of the Scientific Committee (from WCPFC-SC 2017).

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

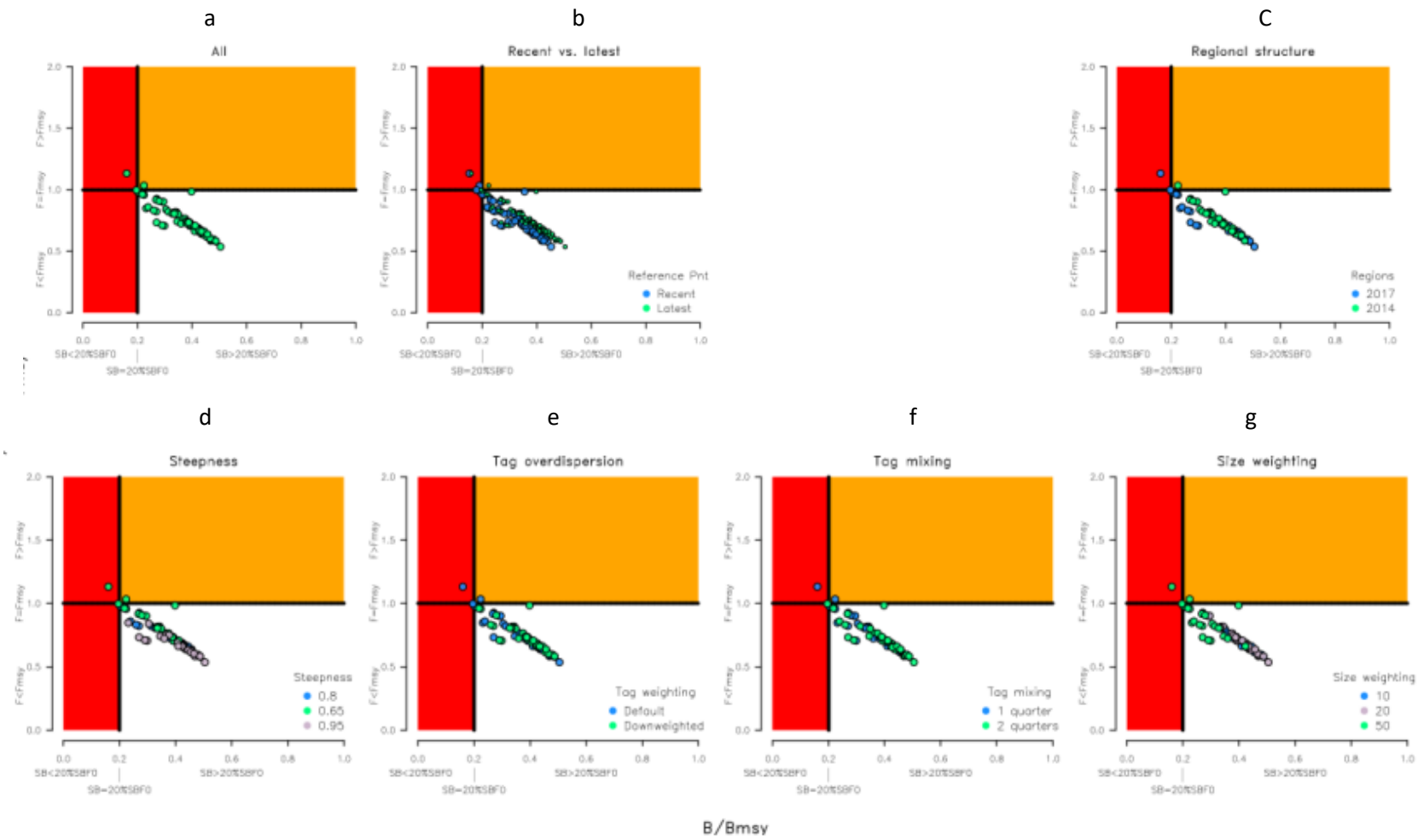

Figure 10. Yellowfin tuna: Majuro plots summarising the results for each of the models in the structural uncertainty grid. The plots represent estimates of stock status in terms of spawning biomass depletion (B/B_{msy} - X-axis) and fishing mortality (F/F_{msy} – Y-axis). The red zone represents spawning biomass 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 MSY is marked with the black dashed line). The points represent SB latest /SB F=0 for each model run except in panel (b) where SB recent /SB F=0 is also displayed. Panels (c)–(g) show the estimates for the different levels for the five axes of the grid. (from Tremblay-Boyer et al. 2017).

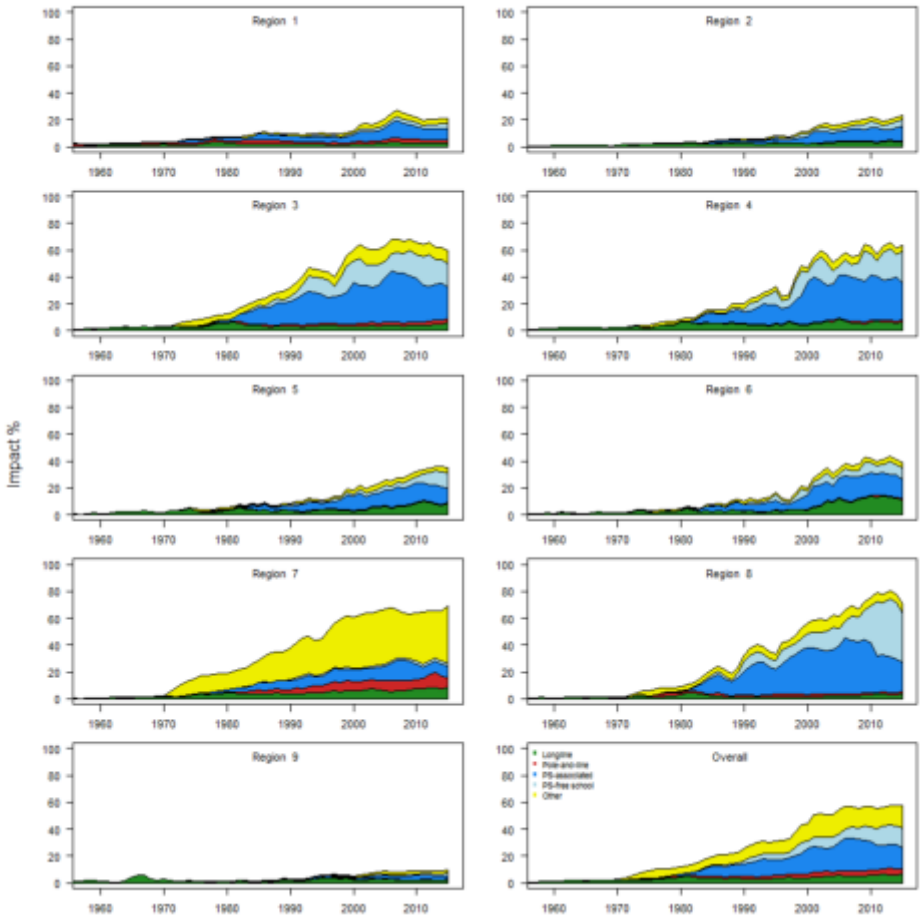

Figure 11. Yellowfin tuna: estimates of reduction in spawning potential due to fishing (fishery impact = 1 –SB latest /SB F=0) by region, and over all regions (lower right panel), attributed to various fishery groups for the diagnostic case model (from Tremblay-Boyer et al. 2017).

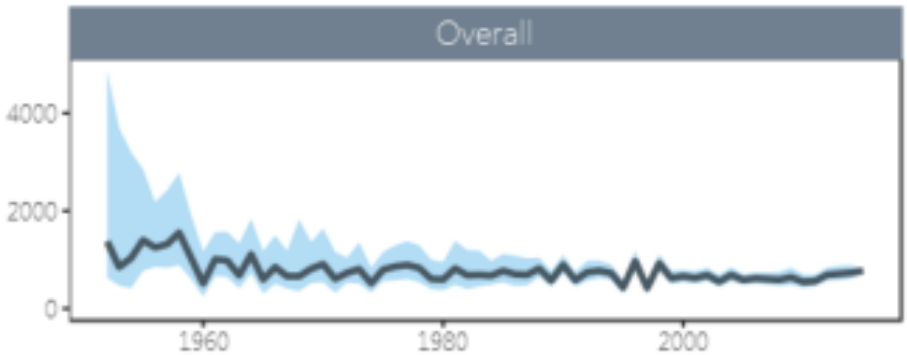

Figure 12. Yellowfin tuna: estimated annual, temporal recruitment (in millions with 95% confidence intervals as the blue shaded regions) for the whole WCPO for the diagnostic case model (from Tremblay-Boyer et al. 2017).

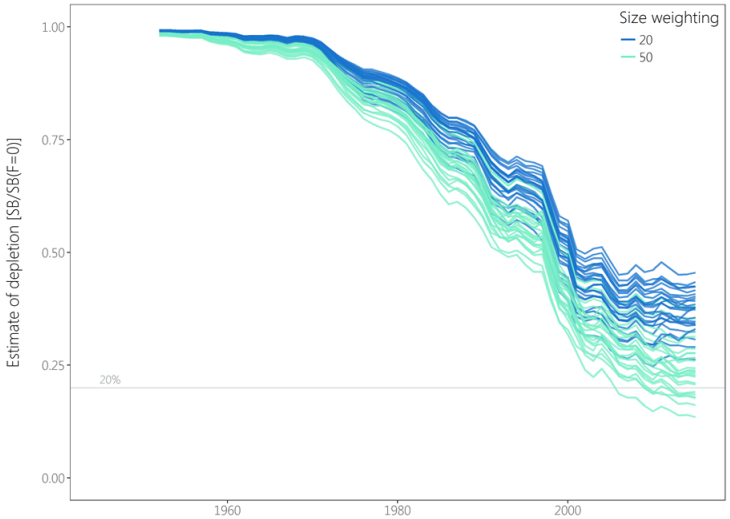

Figure 13. Yellowfin tuna: trajectories of fishing depletion (of spawning potential) for the 48 model runs retained for the structural uncertainty grid used for management advice. The colours depict the models in the grid with the size composition weighting using divisors of 20 and 50 (from WCPFC-SC 2017)..

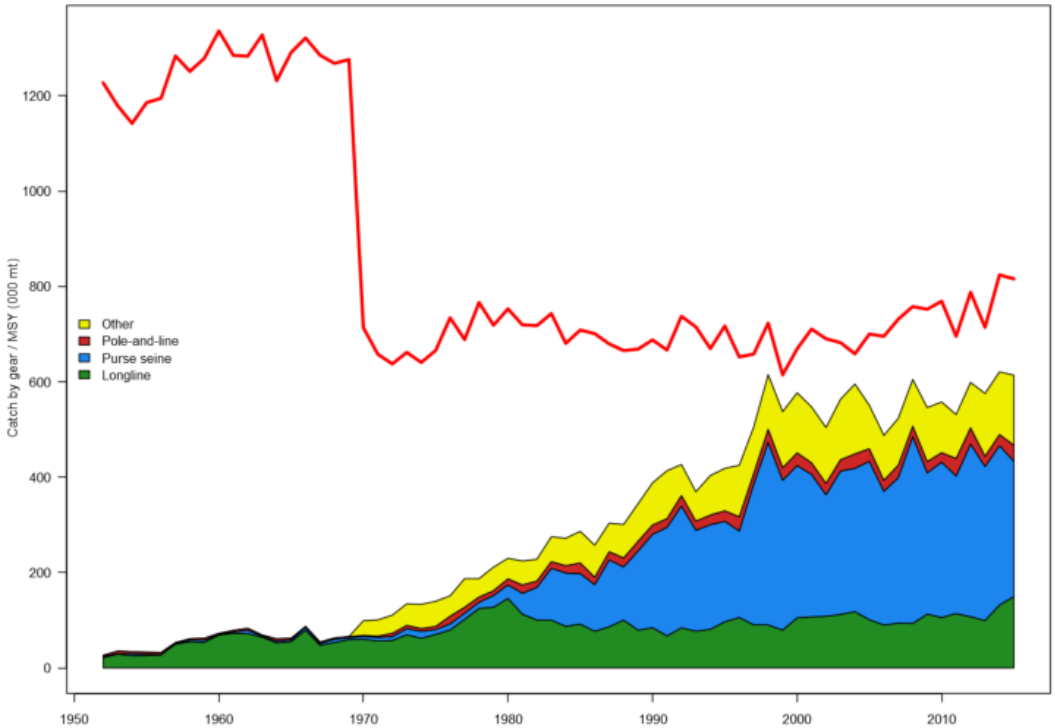

Figure 14. History of the annual estimates of MSY (red line) for the diagnostic case model compared with an annual catch by the main gear types (from Tremblay-Boyer et al. 2017).

Management

There are three distinct levels of management for the UoA which are described more fully in Section 3.5: management by the WCPFC, management by the PNA, and management by the flag states in which fishing vessels are registered. This section provides some background to the first two of these levels of management.

WCPFC management

Yellowfin tuna have been subject to the provisions of CMMs since CMM 2005-01 was adopted. CMM 2018-01 is the latest version of the CMM for the key tropical tuna species (skipjack, yellowfin and bigeye tuna) and contains the key measures that apply to these target species.

The 2017 and 2018 versions of this CMM removed specific objectives that were in earlier versions that the fishing mortality rates for the key tuna species be reduced to or maintained at levels less than F_{MSY} and replaced these firstly with a general statement of the purpose of the CMM:

"Pending the establishment of harvest strategies, and any implementing CMM, the purpose of this measure is to provide for a robust transitional management regime that ensures the sustainability of bigeye, skipjack, and yellowfin tuna stocks."

In addition, an interim target is provided for yellowfin tuna (paragraph 14):

"Pending agreement on a target reference point the spawning biomass depletion ratio ($SB/SB_{F=0}$) is to be maintained at or above the average $SB/SB_{F=0}$ for 2012-2015."

Nevertheless, the general objective remains articulated under the section titled "Principles for Application of the Measure":

"… Measures shall ensure, at a minimum, that stocks are maintained at levels capable of producing maximum sustainable yield…"

There are no provisions within 2018-01 that are relevant to the UoA's catch of yellowfin tuna. The Longline measures contained in paragraphs 39-44 refer only to catches of bigeye tuna; and the paragraphs on Capacity Limits for Longline vessels in paragraphs 47 – 49 specifically exclude small island developing states (of which the Solomon Islands is one) from their scope.

The PNA Longline Vessel Day Scheme

This scheme is described in more detail in Section 3.5.1. In brief, the scheme is similar in principle to the vessel day scheme that has applied to purse seine fishing in PNA waters since 2007. 2016 was the first-year application of the 5-year Total Allowable Effort (TAE) of 165,132 fishing days as adopted by Parties and the final year of the LL VDS trial period. The nominal allocation of days to the Solomon Islands (its Party Allowable Effort – PAE) of 29,432 days is greater than the number of days for which fishing permits were granted (24,000 days) or days used (<20,000 days), so the PAE is not currently a limiting factor for the fishery. Solomon Islands Management arrangements are described in more detail in Section 3.5.2. In brief, fishing is managed by the MFMR using a combination of the provisions contained in the Fisheries Management Act (2015), the Fisheries Management Regulations (2017), and the Tuna Management Development Plan (2015).

Harvest Strategy

The WCPFC has progressed through a stepwise process for implementing the components of a harvest strategy ('the combination of monitoring, stock assessment, harvest control rules and management actions, which may include a Management Plan (MP) or an MP (implicit) and be tested by Management Strategy Evaluation (MSE)', MSCI Vocabulary v1.1).

Establishing a limit reference point (LRP) has involved initially agreeing to a hierarchical approach to identify LRPs for key target species (2011), adopting specific LRPs for skipjack tuna (2012), and agreeing to the time period over which the LRP would be calculated (2013). SC9 (noting the results in SC9-MI-WP-02) recommended that the time window (from start year t1 to end year t2) to be used for defining the LRP of 20% of unfished Spawning Biomass ($SB_{F=0,t1-t2}$) satisfy the following criteria:

a) have a length of 10 years;

b) be based on the years $t1=y_{last}-10$ to $t2=y_{last-1}$ where y_{last} is the last year used in the assessment; and

c) the approach used for calculating the unfished biomass levels be based on scaled estimates of recruitment according to the stock-recruitment relationship.

For a target reference point (TRP), WCPFC's CMM 2014-01 (WCPFC 2014b) reiterated the general objective (contained in previous CMMs) that its management measures aim to ensure that stocks are maintained at a minimum, at levels capable of producing their maximum sustainable yield.

A series of Management Objectives Workshops were subsequently held to help progress agreement on Harvest Strategies for key tuna species. But for yellowfin tuna, although there is an agreed limit reference point, the risk of breaching this reference point has not yet been agreed. The work plan that WCPFC adopted in 2015 and revised in 2016 and 2017 for yellowfin tuna (Table 6) indicates that there are still important decisions to be made concerning management objectives, target reference points, and harvest control rules.

Table 6. Work plan from WCPFC14 (2017)[1] for yellowfin tuna for the adoption of harvest strategies under CMM 2014-06. Bold items are the six elements that are referred to in CMM 2014-06 (a. Objectives, b. Reference Points, c. Acceptable Levels of Risk, d. Monitoring, e. Harvest Control Rules and f. MSE). Items in brackets are related to harvest strategy development, are part of the plan, but are not one of these six elements.

Year	Activity
2017	**Performance indicators and Monitoring strategy (d).** • SC provides advice on a range of performance indicators for the Tropical Longline Fishery to evaluate the performance of harvest control rules. • Commission noted performance indicators for the Tropical Longline Fishery to evaluate harvest control rules
	2017 Progress summary: • Recognized the importance of developing harvest strategies for key stocks in the WCPO. The Commission recognized that this work requires the consideration of fisheries managers and scientists at different stages. The Commission notes that the time required for harvest strategy discussions is substantial but will also vary from year to year and the Commission recognized the need for this to be accommodated. • Agreed to reprioritize as needed the annual agenda of the Commission and Scientific Committee to allow sufficient additional time for consideration of harvest strategy issues. In addition, WCPFC recognized that there may also be a need for a dedicated science/management dialogue.
2018	[SC and Commission discussion of management objectives for fisheries and/or stocks, and subsequent development of candidate TRPs for BET and YFT.]
2019	**Agree on Target Reference Point (b).** • SC provides advice on potential Target Reference Points for yellowfin. • Commission agrees on a TRP for yellowfin. **Develop harvest control rules (e)** and **Management strategy evaluation (f)** • SC provides advice on the performance of candidate harvest control rules. (ongoing). • Commission consider advice on progress towards harvest control rules. (ongoing).
2020	**Develop harvest control rules (e)** and **Management strategy evaluation (f)** • SC provides advice on the performance of candidate harvest control rules. (ongoing). • TCC consider the implications of candidate harvest control rules. (ongoing). • Commission consider advice on progress towards harvest control rules. (ongoing).
2021	**Develop harvest control rules (e)** and **Management strategy evaluation (f)** • SC provides advice on the performance of candidate harvest control rules. • TCC consider the implications of candidate harvest control rules. • Commission consider advice on progress towards harvest control rules. **Adopt a Harvest Control Rule**

[1] The workplan for yellowfin tuna was again modified in 2018 but, in response to a Variation Request from all CABs, the 2017 version of the Workplan has been agreed as the fixed timeline for all conditions concerning adoption all elements of harvest strategies for WCPFC tuna stocks. The 2018 updates to the Workplan are therefore not considered further here. More information on this Variation Request is provided in Section 4.1 on Harmonized Fishery Assessments.

Information

The information used in the assessment of yellowfin tuna consists of catch, effort, length-frequency and weight-frequency data for the fisheries defined in the analysis, and tag release-recapture data. These data come from a range of sources including mandatory logbooks with daily catch and effort records for each fishing operation (as described in CMM 2013-05), a VMS (as adopted under CMM 2014-3). There is a low level of observer coverage of fishing operations but these provide a range of data including a detailed record of catch composition (through the Regional Observer Program as instigated under CMM 2006-07 and now implemented under CMM 2018-05, and implemented through a range of standards and procedures (WCPFC 2018). Records of authorized fishing vessels are also required to be maintained (as described in CMM 2013-10).

Information is also available on stock structure (from tagging and other work), and all other key aspects of the species' biology. Data on environmental conditions is collected and is known to be important for understanding shifts in the distribution of the stock and the fishery.

3.3.2 Albacore tuna

The following background has been drawn mainly from Molony (2008) and Tremblay-Boyer et al. (2018)

Taxonomic classification

Class: Actinopterygii

Order: Perciformes

Family: Scombridae

Genus: *Thunnus*

Species: *alalunga*

Behaviour

Albacore does not appear to follow the scattering layer and does not appear to vertically migrate. Adult albacore has a preference for temperatures between 15°C and 21–25°C, with an optimum of 18–19°C, resulting in the vertical distribution becoming shallower at higher latitudes (Lu et al. 1998, Chen et al. 2005; cited by Molony 2008). However, spawning adults having a preference for higher water temperatures (24.9°C) than non-spawning adults (19.1°C) (Chen et al. 2005). This may result in spawning albacore having a shallower distribution. Adult albacore is often associated with oceanographic features, particularly temperature and oxygen fronts (Collette and Nauen 1983) and eddies produced by current shear, for example between the south equatorial counter-current and the south-equatorial current (Domokos et al. 2007).

Albacore distribution is linked with the distribution of prey species, bathymetry and temperature fronts (Langley 2004). The North Pacific Transition Zone (NPTZ), the Kuroshio Front east of Japan, and the Sub–Tropical Convergence Zone (STCZ) of the temperate south Pacific are examples of frontal zones where albacore are abundant. Albacore tends to occur within frontal zones rather than in the colder (<15°C) poleward water (Sund et al. 1980 – cited by Molony 2008). Troll fishermen operating near the continental shelf edge have found that albacore aggregate near bathymetric features, such as canyons. Albacore fishing and therefore albacore distribution has not been associated with FADs.

Albacore appears to gradually disperse north from the southern latitudes as they grow, but adult longline catch data indicate that they appear to migrate seasonally between tropical and subtropical waters (Langley, 2004; Nikolic et al., 2017). There were limited tagging data available for the assessment.

Albacore is opportunistic carnivores consuming a range of micronekton including fish (mackerels and small tuna), crustaceans and cephalopods (Molony 2008). Their trophic level has been estimated at 4.3 ± 0.2 SE. They are not a low trophic level species.

Growth and Natural Mortality

Albacore can reach 45-50 cm (FL) in their first year (Leroy and Lehodey 2004; Williams et al. 2012) but subsequent growth is slower, at approximately 12 cm per year from years 2 to 4, and declining thereafter (Williams et al. 2012) (Figure 15). Maximum recorded length is about 120 cm (FL) but sex-combined von Bertalanffy growth models for both the South and North Pacific albacore predict L1 around 105 cm (Williams et al. 2012; Xu et al. 2014). Recent analyses of age-at-length from otolith data have identified important patterns in South Pacific albacore growth (Williams et al. 2012; Farley et al. 2013). Males grow to larger sizes than females, and their lengths-at-age start to diverge above about 85 cm when they reach maturity. Lengths-at-age of both sexes also appear to vary with longitude, with both growth rates and maximum sizes increasing toward the east and reaching a maximum at about 160 W. In the New Zealand troll fishery, there are clear 10 cm modes in the length frequency data for juveniles between 50 and 80 cm. These modes should be annual based on maturity ogives for this species combined with indicated annual spawning, peaking in January (Farley et al. 2014).

The instantaneous natural mortality rate is believed to be between 0.2 and 0.5 per year, with significant numbers of fish reaching 10 years or more. The default *M* of 0.4 used in assessments was updated in 2015 to 0.3 to match that used in other stocks, including the North Pacific. A recent meta-analysis of mortality for the North Pacific stock indicated *M* should be closer to 0:4, higher for females, and age-specific (Kinney and Teo 2016).

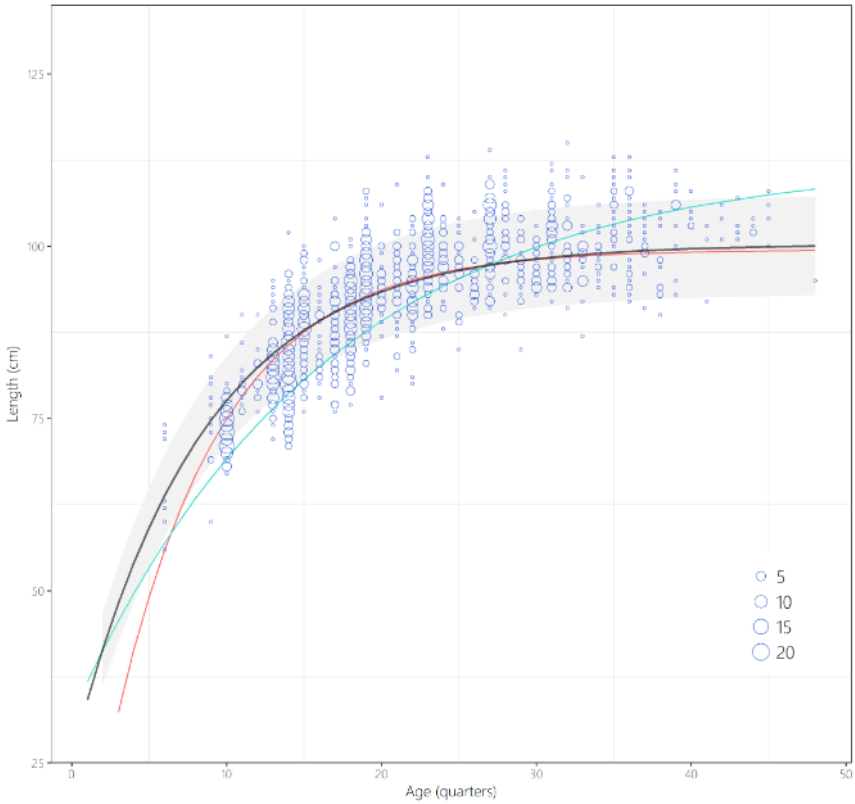

Figure 15. Albacore: Estimated growth for the diagnostic case model vs. age-at-length samples included in the model. The blue line represents the estimated mean fork length (cm) at-age and the blue region represents the length-at-age within one standard deviation of the mean, for the diagnostic case model. The green line is the growth for the Chen-Wells growth scenario and the red line represents the fitted growth from the 2015 stock assessment (from Tremblay-Boyer et al. 2018).

Reproduction and Recruitment

For the South Pacific stock, reproductively active albacore have been found in most waters of the South Pacific Ocean between 10°S and 30°S and 165°E and 115°W (ECOTAP 1999). Histological examination of albacore sampled from Tonga and New Caledonia suggest that albacore are annual spawners with most spawning limited to the austral summer months from November to February (Ramon and Bailey 1996). Albacore larvae have been reported to occur south of 10°S for all months between October and June, indicating that spawning may be protracted.

Gonadosomatic data indicate that female albacore in Tonga and New Caledonia reach maturity at about 80 cm FL (Griggs 2004), corresponding to an age of 4–5 years (Leroy and Lehodey 2004). Albacore approximately five years of age at 50% (Langely 2006). Similar to other scombrids, albacore may be serial spawners that spawn during extended periods. Estimated fecundity for North Pacific albacore ranges from 0.8–2.6 million eggs, assuming release of all advanced eggs occurs in a single spawning, although at least two batches of eggs were identified by Collette and Nauen (1983). However, there is a weak relationship between fish size and ovary size and therefore, the number of eggs produced by a female (Collette and Nauen 1983). The maturity relationships used in the recent assessment are shown in Figure 16.

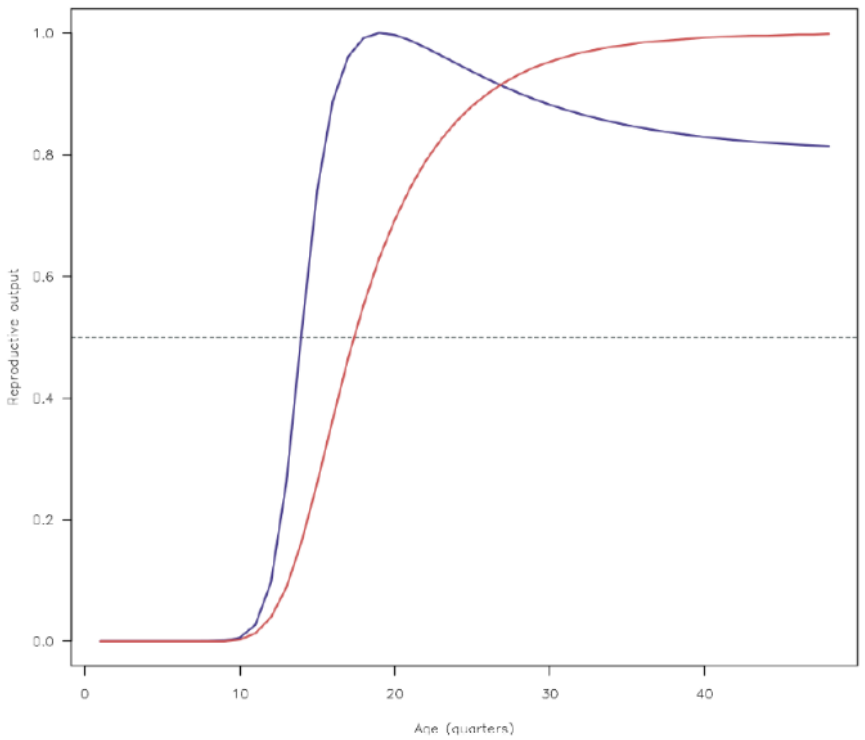

Figure 16. Albacore: Maturity-at-age as used in the diagnostic case model (black line) and in the 2015 assessment (red line) (from Tremblay-Boyer et al. 2018).

Distribution and Stock Structure

Albacore tuna comprises a discrete stock in the South Pacific (Murray 1994). The equator is accepted as the boundary between stocks found in the North and South Pacific and a wide range of evidence supports this hypothesis.

Catch

The catch by the UoA is shown in Figure 17. The majority of the catch comes from Region 2 (Figure 17) which includes the Solomon Islands EEZ. The total catch from the whole stock, as used in the most recent stock assessment, shows the continued dominance of catches by the longline fleets (Figure 18).

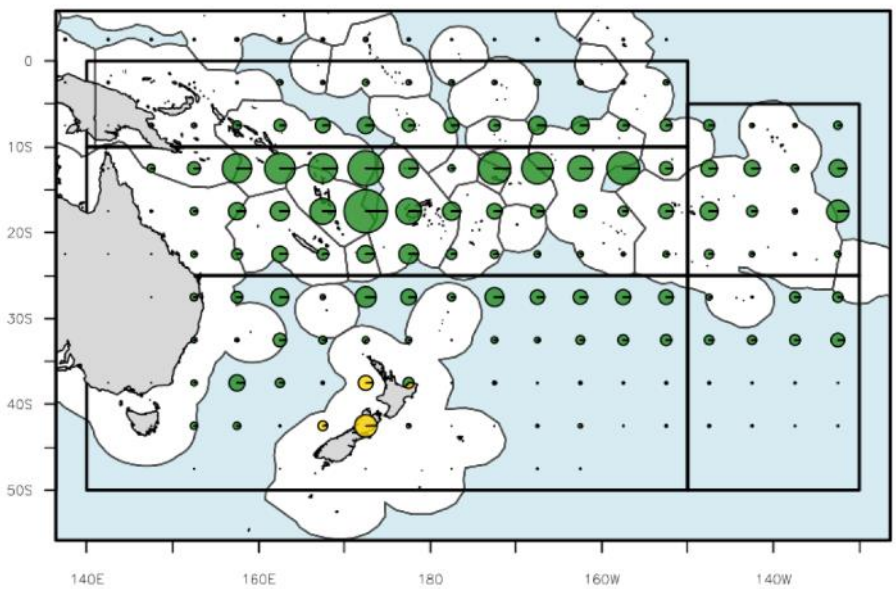

Figure 17. Albacore: Distribution and magnitude of albacore tuna catch for the most recent decade of the stock assessment (2006-2015) by 5-degree square and fishing gear: longline (green), pole-and-line (red), purse seine (blue) and miscellaneous (yellow), for the WCPO and part of the EPO. Overlayed are the regional boundaries for the stock assessment (2018 regional structure) (from Tremblay-Boyer et al. 2018).

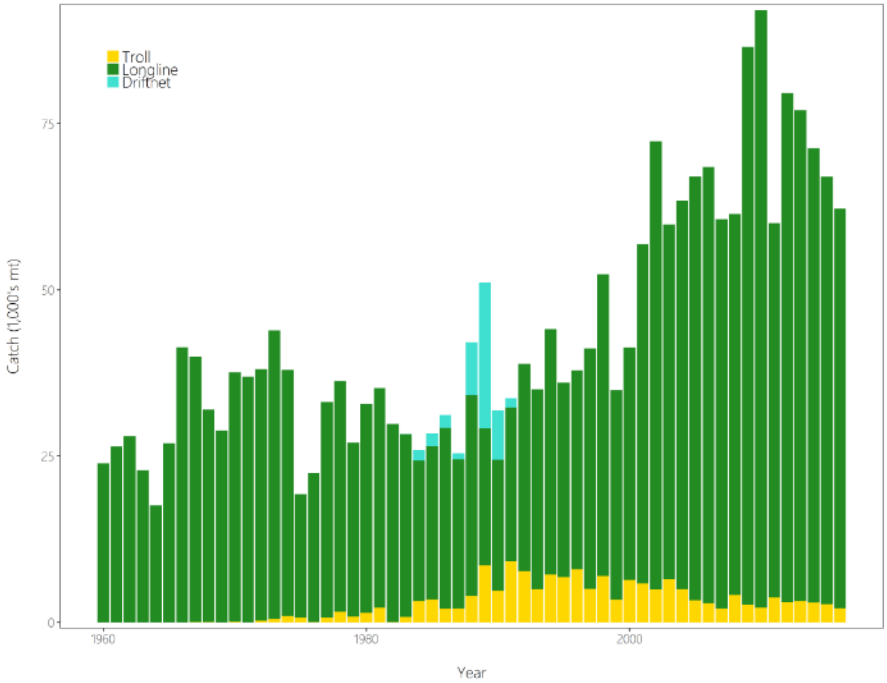

Figure 18. Albacore: Time series of total annual catch (1000's mt) by fishing gear for the diagnostic case model over the full assessment period. The different colors refer to longline (green), troll (yellow) and driftnet (turquoise). Note that the catch by longline gear has been converted into catch-in weight from catch-in-numbers and so estimates differ from the annual catch estimates presented in Williams and Reid (2018), however, these catches enter the model as catch-in-numbers (from Tremblay-Boyer et al. 2018).

Stock assessment

Stock assessments for albacore tuna have been conducted regularly since 1999. The assessment model uses MULTIFAN-CL and is based mainly on catch and effort data for various fleets, size data, and tagging data.

The most recent assessment (Tremblay-Boyer et al. 2018) was an update of the previous assessment (Harley et al. 2015) but also addressed relevant recommendations of that assessment report, and the recommendations of the 2018 pre-assessment workshop (PAW; Pilling and Brouwer, 2018), to explore uncertainties in the assessment model, particularly in response to the inclusion of additional years of data and to improve diagnostic weaknesses in previous assessments.

In addition to the diagnostic case model, the assessment reported the results of one-off sensitivity models to explore the relative impacts of key data and model assumptions for the diagnostic case model on the stock assessment results and conclusions. The assessment also included a structural uncertainty analysis (model grid) for consideration in developing management advice, where all possible combinations of the most important axes of uncertainty from the one-off models were included. It was recommended that management advice be formulated from the results of the structural uncertainty grid.

Across the range of models run in this assessment, the most important factors when evaluating stock status were the assumed level of natural mortality (*M*), and growth. For natural mortality, age-invariant *M* values of 0.3 yr^1 (consistent with the 2015 assessment) and 0.4 yr^1 were assumed, with the latter resulting in more optimistic assessment outcomes. Age-dependent *M* settings were also evaluated as one-off sensitivities. Natural mortality remains a key uncertainty in this assessment, and it is appropriate that such uncertainty continue to be reflected in the overall stock assessment results. For growth, the conditional age-at-length data from recent work was incorporated into the diagnostic case model, while an alternative scenario fixed at the parameter values of the sex-combined `Chen-Wells' growth model used within the 2017 North Pacific albacore reference case model run was also evaluated. Use of the latter resulted in more pessimistic assessment outcomes. There remains an unresolved inconsistency in the growth rates indicated by the VB curve fitted to the age-at-length data (approximately 20 cm per year for albacore 20-70 cm in length) and presumed annual modes with 10 cm spacing that consistently appear in the troll size composition data, and historically in the driftnet size composition data. Additional analysis of otoliths taken from 50-70 cm albacore in the troll fishery is required to identify the reason for this inconsistency. This is work that needs to be undertaken with high priority.

The general conclusions of this assessment were as follows:

- While biomass was estimated to have declined initially, estimates of spawning potential, and biomass vulnerable to the various longline fisheries have been stable or possibly increasing slightly over the past 20 years. This has been influenced mainly by the estimated recruitment, which has generally been somewhat higher since 2000 than in the two decades previous.
- Most models also estimated an increase in spawning and longline vulnerable biomass since about 2011, driven by some high estimated recruitments, particularly around 2009.
- A steady increase in fishing mortality of adult age-classes was estimated to have occurred over most of the assessment period, accelerating since the 1990s but declining following the

decline in longline catch seen since 2010. Juvenile fishing mortality increased until around 1990 and has remained stable at a low level since that time.

- Key stock assessment results across all models in the structural uncertainty grid showed a wide range of estimates.
- All models indicated that South Pacific albacore was above the limit reference point (of $0.2SB_{F=0}$), with overall median depletion for 2016 ($SB_{latest}/SB_{F=0}$) estimated at 0.52 (80 percentile range 0.37-0.69).
- Recent average fishing mortality was estimated to be well below F_{MSY} (median $F_{recent}/F_{MSY} = 0.2$, 80 percentile range 0.08-0.41).

The 2018 assessment used a revised regional structure. Region 2 is estimated to contain the majority of the spawning potential and total biomass but most of the recruitment is estimated to originate in Regions 3 and 5 (Figure 19). Recruitment from these southern regions was noted as being consistent with where small albacore first appear in the troll fishery, and also where smaller albacore occur in longline fisheries.

Other results of the structural uncertainty analysis (Table 7, Table 20, and Table 21) were as follows:

- The uncertainty identified was higher than for previous assessments for this albacore stock,
- The most influential axis was that of natural mortality;
- The next most influential axis was growth which further subset the runs into two distinct categories in terms of depletion trends, with virtually no overlap from 1980 onwards.
- CPUE was the next most influential axis. Overall the geostatistical CPUE resulted in a slightly higher median depletion but the traditional CPUE runs were more variable in terms of the initial depletion.
- Size weighting was not the main driver of grid trends.
- The steepness axis had minimal influence on the grid for runs predicting lower, more optimistic depletion estimates, but runs approaching 40% depletion had a clear pattern with 0.65 and 0.95 steepness resulting in more pessimistic and more optimistic terminal depletion, respectively.

The WCPFC Scientific Committee accepted this assessment and noted that the assessment results show that while the stock depletion ($SB/SB_{F=0}$) has exhibited a long-term decline the stock was not in an overfished state and overfishing was not taking place (WCPFC-SC 2018).

In 2018 the WCPFC Scientific Committee also recalled its previous advice from SC11, SC12, and SC13 that longline fishing mortality and longline catch be reduced to avoid a decline in the vulnerable biomass so that economically viable catch rates can be maintained, especially for the longline catch of adult albacore. SC14 recommended that this advice be taken into consideration when the TRP for South Pacific albacore was discussed at the following WCPFC Commission meeting.

Previously, WCPFC-SC (2017) had noted the results of status quo projections, assuming current southern longline and troll fishery effort would continue into the future at levels equal to those seen in 2015 (Figure 23). These indicated that, if 2015 fishing effort levels continue into the future, the stock was predicted to continue to decline on average, falling to $SB_{current}/SB_{F=0} = 0.35$ in 2033 with a 7%

predicted probability of being below the LRP. As SB_{MSY} has been estimated to be less than 0.1 $SB_{F=0}$ these projections show there to be no risk of the stock being reduced to below B_{MSY} within the next 5 years.

Table 7. Albacore: Summary of reference points over all of the 72 individual models in the structural uncertainty grid (from Tremblay-Boyer et al. 2018).

	Mean	Median	Min	10%	90%	Max
C_{latest}	61719	61635	60669	60833	62704	63180
MSY	100074	98080	65040	70856	130220	162000
$YF_{current}$	71579	71780	56680	62480	80432	89000
fmult	6.2	4.96	1.89	2.44	12.05	17.18
F_{MSY}	0.07	0.07	0.05	0.05	0.09	0.1
$F_{recent}/F_{\mathrm{MSY}}$	0.23	0.2	0.06	0.08	0.41	0.53
SB_{MSY}	71407	68650	26760	39872	100773	134000
SB_0	443794	439800	308800	353870	510530	696200
SB_{MSY}/SB_0	0.16	0.17	0.07	0.1	0.21	0.23
$SB_{F=0}$	469004	462633	380092	407792	534040	620000
$SB_{\mathrm{MSY}}/SB_{F=0}$	0.15	0.15	0.06	0.09	0.2	0.22
SB_{latest}/SB_0	0.55	0.56	0.33	0.42	0.69	0.74
$SB_{latest}/SB_{F=0}$	0.53	0.52	0.3	0.37	0.69	0.77
$SB_{latest}/SB_{\mathrm{MSY}}$	4	3.42	1.45	1.96	7.07	10.74
$SB_{recent}/SB_{F=0}$	0.51	0.52	0.32	0.37	0.63	0.72
$SB_{recent}/SB_{\mathrm{MSY}}$	3.88	3.3	1.58	1.96	6.56	9.67

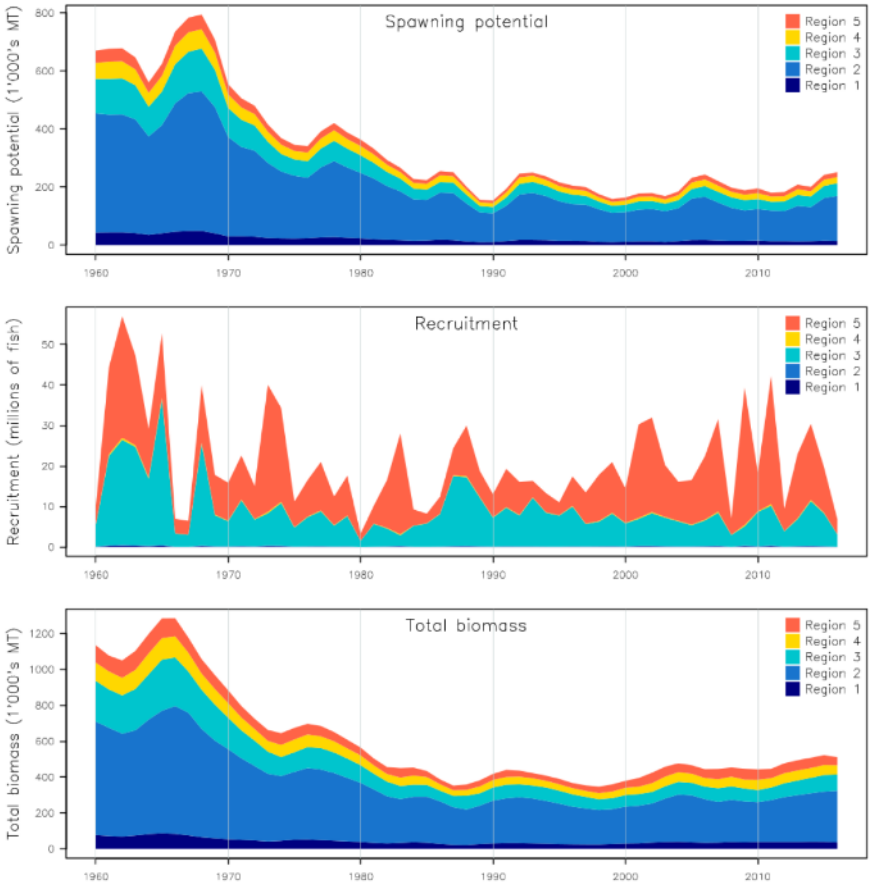

Figure 19. Albacore: Estimated annual average recruitment, spawning potential and total biomass by model region for the diagnostic case model, showing the relative sizes among regions (from Tremblay-Boyer et al. 2018).

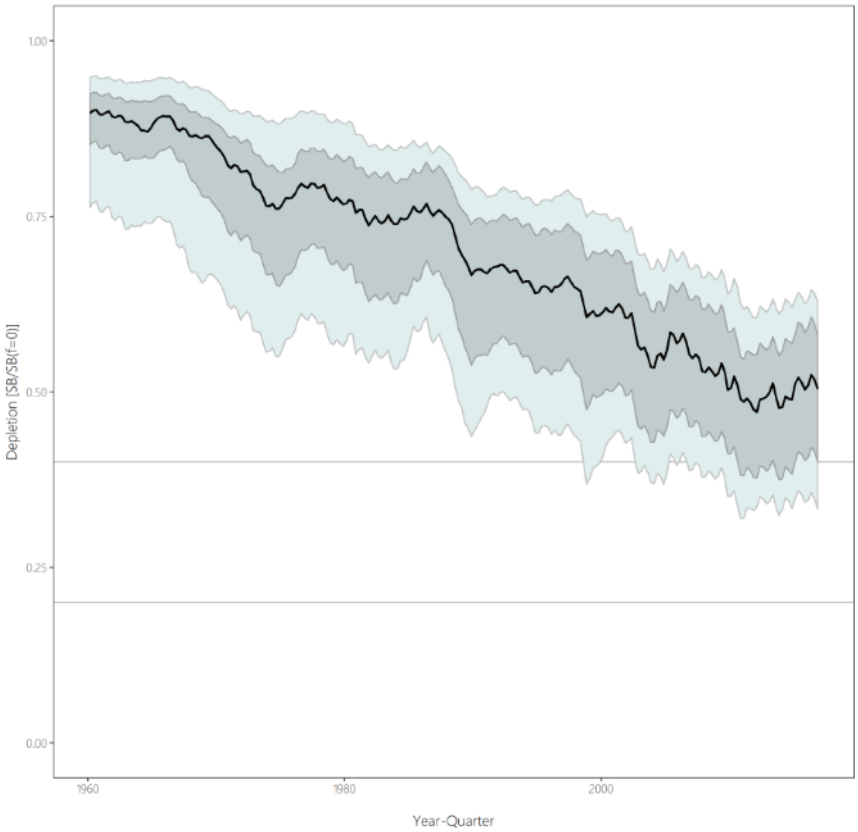

Figure 20. Albacore: Distribution of time series depletion estimates across the structural uncertainty grid. The black line represents the grid median trajectory, the dark grey region represents the 50%ile range, light grey the 90%ile range (from Tremblay-Boyer et al. 2018).

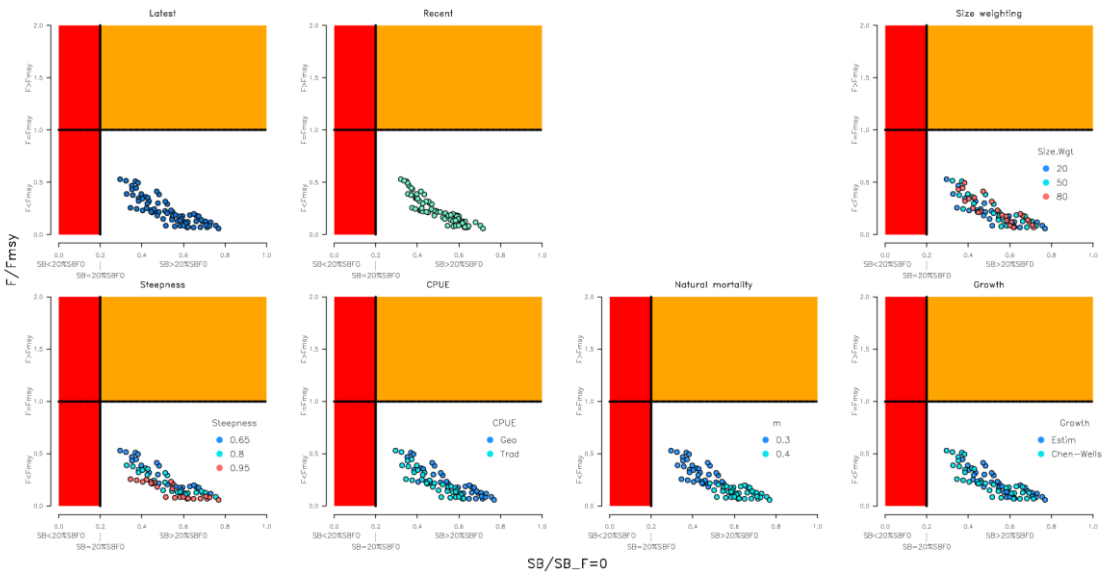

Figure 21. Albacore: Majuro plots summarising the results for each of the models in the structural uncertainty grid. The plots represent estimates of stock status in terms of spawning potential depletion and fishing mortality. The red zone represents spawning potential levels lower than the agreed limit reference point which is marked with the solid black line. The orange region is for fishing mortality greater than F_{MSY} (F_{MSY} is marked with the black dashed line). The points represent $SB_{latest}/SB_{F=0}$ for each model run except in panel (b) where $SB_{recent}/SB_{F=0}$ is displayed. The remaining panels show the estimates for the different levels for the five axes of the grid (from Tremblay-Boyer et al. 2018).

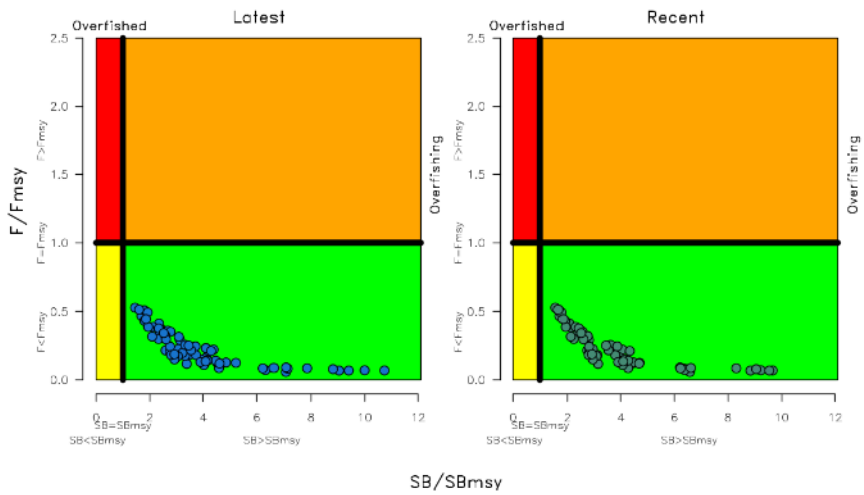

Figure 22. Albacore: Kobe plots summarising the results for each of the models in the structural uncertainty grid under the $SB_{latest}/SB_{F=0}$ and the $SB_{recent}/SB_{F=0}$ reference points (from Tremblay-Boyer et al. 2018).

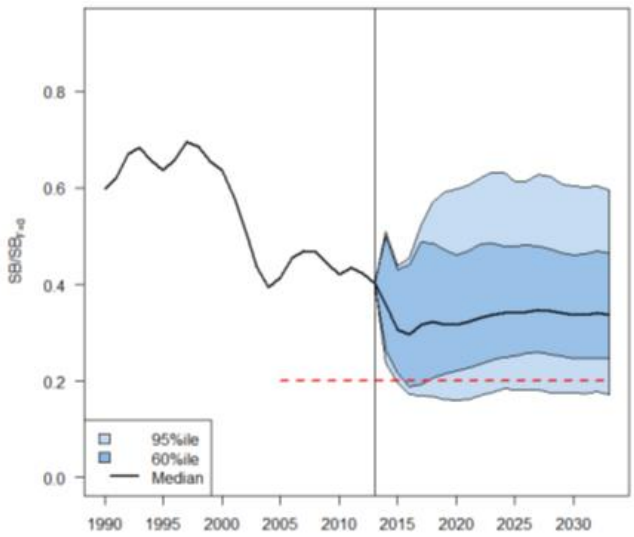

Figure 23. Albacore: Stochastic projections of adult stock status under 2014 longline and troll effort levels. The limit reference point (20% $SB_{F=0}$) is indicated by the horizontal dashed red line. Note: from 1960, up to 2013 inclusive the line represents the median across the 9-assessment model runs (structural uncertainty only); uncertainty after 2013 represents both structural uncertainty and stochastic recruitment (1800 simulation runs) (from WCPFC-SC 2017).

Management

There are four distinct levels of management for the UoA which are described more fully in Section 3.5: management by the WCPFC, management by the PNA, management by the Solomon Islands government, and management by the flag states in which fishing vessels are registered. This section provides some background to the first three of these levels of management.

WCPFC management

Management actions by the WCPFC that are specific to south Pacific albacore tuna are contained in CMM 2015-02:

1. Commission Members, Cooperating Non-Members, and participating Territories (CCMs) shall not increase the number of their fishing vessels actively fishing for South Pacific albacore in the Convention Area south of 20°S above 2005 levels or recent historical (2000-2004) levels.
2. The provisions of paragraph 1 shall not prejudice the legitimate rights and obligations under international law of small island developing State and Territory CCMs in the Convention Area for whom South Pacific albacore is an important component of the domestic tuna fishery in waters under their national jurisdiction, and who may wish to pursue a responsible level of development of their fisheries for South Pacific albacore.
3. CCMs that actively fish for South Pacific albacore in the Convention Area south of the equator shall cooperate to ensure the long-term sustainability and economic viability of the fishery for South Pacific albacore, including cooperation and collaboration on research to reduce uncertainty with regard to the status of this stock.
4. CCMs shall report annually to the Commission the annual catch levels taken by each of their fishing vessels that have taken South Pacific albacore, as well as the number of vessels actively fishing for South Pacific albacore, in the Convention area south of 20°S. Catch by vessel shall be reported according to the following species groups: albacore tuna, bigeye tuna, yellowfin tuna, swordfish, other billfish, and sharks. Initially, this information will be provided for the period 2006-2014 and then updated annually. CCMs are encouraged to provide data from periods prior to these dates.
5. This measure will be reviewed annually on the basis of advice from the Scientific Committee on South Pacific albacore.

After noting in the introductory text several cautionary aspects of the status of the fishery that indicate that catches should not be increased, the CMM contains one substantive measure in paragraph 1. Of relevance to the UoA, the next paragraph in this CMM indicates that small island developing states (of which the Solomon Islands is one) are essentially exempt from this measure. The remaining paragraphs of the CMM place no restrictions on fishing activity.

The PNA Longline Vessel Day Scheme

This scheme is described in more detail in Section 3.5.1. In brief, the scheme is similar in principle to the vessel day scheme that has applied to purse seine fishing in PNA waters since 2007. 2016 was the first-year application of the 5-year Total Allowable Effort (TAE) of 165,132 fishing days as adopted by Parties and the final year of the LL VDS trial period. The nominal allocation of days to the Solomon Islands (its Party Allowable Effort – PAE) of 29,432 days is greater than the number of days for which fishing permits were granted (24,000 days) or days used (<20,000 days), so the PAE is not currently a limiting factor for the fishery.

Solomon Islands Management arrangements

These are described in more detail in Section 3.5.2. In summary, fishing is managed by the MFMR using a combination of the provisions contained in the Fisheries Management Act (2015), the Fisheries Management Regulations (2017), and the Tuna Management Development Plan (2015).

Harvest Strategy

The process that has been followed by WCPFC as it develops harvest strategies for tropical tunas has been described above for yellowfin tuna. In addition, for South Pacific albacore, there has been a separate virtual inter-sessional working group that has been formed to help develop a 'roadmap'. The activity report provided to the 2018 Commission meeting (WCPFC-SPA 2018) records the terms of reference for this working group as being to consider management issues including:

a. Elements are necessary for the implementation of the Harvest Strategy

b. An allocation process

c. Monitoring and reporting priorities and addressing of gaps for all fisheries taking south Pacific albacore in the WCPO.

This report contained a draft work plan for discussion at WCPFC15, including an allocation schedule, but there had been discussion to the effect that *"the goal of having limits and allocations for south Pacific albacore will be adopted in 2021, to align with the adoption of harvest control rules, as currently scheduled in the harvest strategy work plan, is ambitious and warrants further discussion with other CCMs."*

For South Pacific albacore, the WCPFC has adopted 20% $SB_{F=0}$ as the limit reference point (LRP), where $SB_{F=0}$ is calculated as the average over the period 2006-2015. Generally, the WCPFC has set reference points for tuna stocks relative to MSY related reference points which is consistent with Article 5(b) of its convention text:

"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"

However, stock assessments estimate that SB_{MSY} is lower than the agreed LRP, being only 16% of the $SB_{F=0}$, in the 2018 assessment (Tremblay-Boyer et al. 2018). Therefore, other options for a TRP have been considered. In the meantime, stock assessments have continued to report stock status relative to MSY based reference points including the rations of F_{latest} and F_{recent} to F_{MSY} and of SB_{latest} and SB_{recent} to SB_{MSY} .

In 2018, and since the most recent assessment, the WCPFC adopted an interim TRP for south Pacific albacore of 0.56 $SB_{F=0}$, with the intention of achieving an increase in the profitability of the fishery, as described in the following extract from WCPFC15 Summary report (WCPFC 2018b).

207. The Commission shall amend or develop appropriate conservation and management measures to implement a harvest control rule, developed in accordance with CMM 2014-06, with the objective of maintaining the south Pacific albacore spawning stock biomass at the target level on average and according to the timeframes specified in paragraph 209.

208. In order to manage the required reduction in catches, the timeline for achieving the interim target reference point shall be no later than 20 years. The Science Service Provider is tasked with identifying a range of alternative catch pathways and timeframes that achieve this, for consideration in 2019.

209. In undertaking the assessment identified in paragraph 209 information from all fisheries will be included while noting that any management measures must take account of the impact of different gear types.

210. The Scientific Committee shall refer to the target reference point in its assessment of the status of the WCPO South Pacific albacore tuna stock and in reporting to the Commission on management advice and implications for this stock.

211. Considering that the distribution of the South Pacific albacore stock goes beyond the WCPFC Convention area and the management of this stock is the responsibility of both WCPFC and IATTC, WCPFC15 requested the Scientific Services Provider to coordinate with the IATTC scientific staff with the view to consider including the entire South Pacific in future assessments.

WCPFC15 agreed on an interim target reference point (TRP) for south Pacific albacore at 56 percent of spawning stock biomass in the absence of fishing (0.56 SBF=0)[2] with the objective of achieving an 8 percent increase in catch per unit of effort (CPUE) for the southern longline fishery as compared to 2013 levels.[3] If a future stock assessment indicates that this interim TRP will not result in the desired longline CPUE, then the interim TRP will be revised in order to meet this objective. The TRP shall be reviewed every 3 years, consistent with the SP albacore assessment schedule.

This newly agreed TRP is an economic one so, although the stock is estimated to be below the TRP and some measure of rebuilding is desirable, it is not considered to be overfished or to be requiring rebuilding for conservation reasons.

FFA member countries originally proposed a target that would achieve a 17% increase in CPUE above 2013 levels for the fishery (FFA 2018), on the basis that such an increase would be necessary to give all vessels in the southern longline fishery, including SIDS domestic longline fisheries, a reasonable chance of remaining economically viable. Analyses by the Offshore Fisheries Program (OFP) of the Secretariat to the Pacific Community (SPC) estimated that such an increase in CPUE would require $SB/SB_{F=0}$ to be set at 0.60 (Table 8). These analyses also estimate that the agreed interim TRP of 0.56 $SB/SB_{F=0}$ would have an approximate risk of breaching the LRP of less than 3% but noted that *"None of the uncertainty due to e.g. future recruitment variability is captured, and we, therefore, expect the risk to be underestimated."*

Harvest control rules for south Pacific albacore have yet to be adopted. Paragraphs 209 and 210 from the WCPFC15 summary report note that options for achieving the TRP within 20 years are to be considered in 2019.

The work plan that WCPFC adopted in 2015 and revised in 2016 and 2017 for South Pacific albacore tuna (Table 9) indicates that there are still important decisions to be made concerning harvest control rules.

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[2] The method to be used in estimating the recent average spawning biomass in the absence of fishing shall be the same as that adopted by the Commission for the limit reference point, as described in paragraph 3 of CMM 2015-06.

[3] The proxy for CPUE will be the southern longline vulnerable biomass as estimated within the stock assessment.

Table 8. Albacore: Average conditions for the southern longline fishery and South Pacific albacore stock, including the approximate risk of falling below the adopted LRP1, under different candidate TRP levels. Greyed cells indicate the projection settings equivalent to the candidate aim of management. All values represent medians across the 72 assessment models (from SPC-OFP 2018).

Management aim	VB_{equil}/VB_{2013}	Scalar on 2013-15 avg catches	$SB/SB_{F=0}$	F/F_{MSY}	Approx risk SB < LRP
Achieve SB_{MSY}	0.27	1.32	0.15	-	54%
Maintain status quo (catch at 2013-15 avg)	0.70	1.00	0.42	0.26	24%
Reduce catch by 10%	0.84	0.90	0.47	0.20	14%
Maintain the stock at recent levels	0.99	0.81	0.52	0.17	3%
Keep CPUE at 2013 levels on average	1.00	0.80	0.53	0.17	3%
Increase CPUE by 10% from 2013 levels	1.10	0.73	0.57	0.15	0%
Increase CPUE by 17% from 2013 levels	1.17	0.67	0.60	0.14	0%
Increase CPUE by 25% from 2013 levels	1.25	0.62	0.63	0.12	0%

Table 9. Work plan from WCPFC14 (2017) for albacore tuna[4] for the adoption of harvest strategies under CMM 2014-06.

Year	Activity
2017	**Performance indicators and monitoring strategy (d)** ▪ SC provided advice on a range of performance indicators for the Southern Longline Fishery to evaluate the performance of harvest control rules. ▪ Commission noted performance indicators for the Southern Longline Fishery to evaluate harvest control rules.
	2017 Progress summary: ▪ Noted candidate performance indicators for the Southern Longline Fishery and the Tropical Longline fishery to evaluate harvest control rules. ▪ Agreed on actions to prioritize the development and adoption of a Target Reference Point for South Pacific albacore at WCPFC15.
2018	**Agree on Target Reference Point (b).** ▪ Commission agrees on a TRP for South Pacific albacore. **Develop harvest control rules (e)** and **Management strategy evaluation (f)** ▪ SC provides advice on the performance of candidate harvest control rules. (ongoing). ▪ TCC consider the implications of candidate harvest control rules. (ongoing). ▪ Commission consider advice on progress towards **harvest control rules**. (ongoing). [SC updated advice on SP albacore status.]
2019	**Develop harvest control rules (e)** and **Management strategy evaluation (f)** ▪ SC provides advice on the performance of candidate harvest control rules. (ongoing). ▪ TCC consider the implications of candidate harvest control rules. (ongoing). ▪ Commission consider advice on progress towards **harvest control rules**. (ongoing).
2020	**Develop harvest control rules (e)** and **Management strategy evaluation (f)**

[4] The workplan for albacore tuna was again modified in 2018 but, in response to a Variation Request from all CABs, the 2017 version of the Workplan has been agreed as the fixed timeline for all conditions concerning adoption all elements of harvest strategies for WCPFC tuna stocks. The 2018 updates to the Workplan are therefore not considered further here. More information on this Variation Request is provided in Section 4.1 on Harmonized Fishery Assessments.

	▪ SC provide advice on the performance of candidate harvest control rules. (ongoing). ▪ TCC consider the implications of candidate harvest control rules. (ongoing). ▪ Commission consider advice on progress towards **harvest control rules**. (ongoing).
2021	**Develop harvest control rules (e)** and **Management strategy evaluation (f)** ▪ SC provide advice on the performance of candidate harvest control rules. ▪ TCC consider the implications of candidate harvest control rules. ▪ Commission consider advice on progress towards **harvest control rules**. **Adopt a Harvest Control Rule.**

Information

The information used in the assessment of south Pacific albacore tuna consists of catch, effort, length-frequency and weight-frequency data for the fisheries defined in the analysis, and tag release-recapture data. These data come from a range of sources including mandatory logbooks with daily catch and effort records for each fishing operation (as described in CMM 2013-05), a VMS (as adopted under CMM 2014-3). There is a low level of observer coverage of fishing operations but these provide a range of data including a detailed record of catch composition (through the Regional Observer Program as instigated under CMM 2006-07 and now implemented under CMM 2018-05, and implemented through a range of standards and procedures available on the WCPFC website: https://www.wcpfc.int/regional-observer-programme. Records of authorized fishing vessels are also required to be maintained (as described in CMM 2013-10).

Information is also available on stock structure (from tagging and other work), and all other key aspects of the species' biology. Data on environmental conditions is collected and is known to be important for understanding shifts in the distribution of the stock and the fishery.

3.4 Principle Two: Ecosystem Background

All species that are affected by the fishery and that are not part of the Unit of Certification are considered under Principle 2. This includes species that are retained for sale or personal use (assessed under Performance Indicator 2.1), bycatch species that are discarded (Performance Indicator 2.2), and species that are considered endangered, threatened or protected by the government in question or binding international agreements provided in FCRv2.0 SA3.1.5.2 (Performance Indicator 2.3). This section contains an evaluation of the total impact of the fishery on all components in P2 and includes both observed and unobserved fishing mortality. Unobserved mortality may occur from illegal, unregulated or unreported (IUU) fishing, biota that are injured and subsequently die as a result of coming in contact with fishing gear, ghost fishing, waste, or biota that are stressed and die as a result of attempting to avoid being caught by fishing gear. This section also considers impacts on marine habitats (Performance Indicator 2.4) and the ecosystem more broadly (Performance Indicator 2.5).

3.4.1 Harmonization

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). UoAs assessed using default trees prior to CR V2.0 would not have to make this evaluation.

V2.0 of the MSC standard requires that any fishery under assessment that has spatial overlap with the Units of Assessment of any other MSC certified fisheries, be explicitly considered in Principle 2.

'Overlapping UoAs' are assessed at different levels depending on which PI is evaluated. For P2 primary species, teams need to evaluate whether the cumulative impact of overlapping MSC UoAs hinders the recovery of 'main' primary species. For secondary species, cumulative impacts only need to be considered in cases where two or more UoAs have 'main' catches that are 'considerable', defined as a species being 10% or more or the total catch. For ETP species, the combined impacts of MSC UoAs needs to be evaluated, but only in cases where either national and/or international requirements set catch limits for ETP species.

All of the requirements for cumulative impacts for species are applicable to their respective Outcome PIs. For habitats, in contrast, cumulative impacts are evaluated in the management PI (2.4.2). The requirements here aim to ensure that vulnerable marine ecosystems (VMEs) are managed such that the impact of all MSC UoAs does not cause serious and irreversible harm to VMEs.

Harmonization considerations for Principle 2 issues are addressed in greater detail below in section 4.1 Harmonized Fishery Assessment.

3.4.2 Observer Programs

Observer programs are only one part of the system for monitoring, control, and surveillance of the fishery (which are described more fully in section 3.5) but are particularly important for providing data on the impacts of the fishery on non-target species, including discards and endangered, threatened, and protected species (ETP).

The WCPFC Regional Observer Programme (Commission ROP), as now implemented under CMM 2018-05, has the objectives of collecting verified catch data, other scientific data, and additional information related to the fishery from the Convention Area and to monitor the implementation of

the conservation and management measures adopted by the Commission. This program has the objective "to collect verified catch data, other scientific data, and additional information related to the fishery from the Convention Area and to monitor the implementation of the conservation and management measures adopted by the Commission."

Each CCM of the Commission is required to ensure that fishing vessels fishing in the Convention Area, except for vessels that operate exclusively within waters under the national jurisdiction of the flag State, are prepared to accept an observer from the Commission ROP if required by the Commission. Furthermore, each CCM is responsible for meeting the level of observer coverage as set by the Commission and source observers for their vessels. The target coverage levels in the region are 100% coverage of purse seine[5], 5% longline effort, and all high seas transshipments, but these targets do not apply to UoA vessels as these fish entirely within the Solomon Islands EEZ. For longline fishing within the Solomon Islands EEZ, the coverage rates are very low. Observer data were only available for 35 sets in 2014 and 38 sets in 2015, which is less than 2% of the total number of sets for which logbook data were provided (2,736 in 2014 and 2,329 in 2015). The Solomon Island Annual Report to WCPFC's Scientific Committee in 2018 indicated that "Coverage by Solomon islands observers in foreign locally based longline was very low. Only 2 observer's trips were done in 2017".

The ROP is a collection of National and Regional observer programs that are required to be audited before being authorized to join the ROP. The WCPFC has developed basic standards for the formation and operation of observer programs that wish to be part of the ROP. The WCPFC ROP standards cover minimum data fields, observer training, observer trainers, code of conduct, sea safety, placement/deployment, briefing and debriefing, debriefing training, equipment and materials, communications, performance of observers, dispute mechanism, authorisation process, coverage, vessel safety certificate, insurance, and CMM adherence. These standards are available at http://www.wcpfc.int/doc/wcpfc-regional-observer-programme-standards. The format of a collection of required data fields is up to the observer providers, however, a useful guide for a format is the SPC/FFA harmonised format, which is used by a number of programs.

The Solomon has its own National Observers Programme which is administered by the Offshore Division of the MFMR. It includes over 100 observers, but almost all of the observer work is focused on purse seine fleets. The program also collects scientific and compliance data onboard local, bilateral and sub-regional licensed fishing vessels, with these administered by the Solomon Islands National Observers Program (SBOB), PNA, and FFA respectively. The WCPFC requirements for observer coverage were originally specified under CMM 2007-01 and are now described in CMM 2018-05. The revised CMM still specifies that "*No later than 30 June 2012, CCMs shall achieve a minimum of 5% observer coverage of the effort in each fishery under the jurisdiction of the Commission*". The failure of most countries to reach this required target of 5% observer coverage for longline vessels has been the subject of regular commentary at meetings of the Technical and Compliance Committee.

During the site visit, the team was advised of the establishment of a local Electronic Monitoring center in Honiara and trials that had been undertaken with this technology. It was indicated that this approach is seen as a potential alternative to onboard observers for providing data not otherwise recorded in logbooks. This trial in 2014 included four separate trips and 199 sets of longlines with a combination of observers and electronic monitoring The data from the observers in this trial were

[5] The requirement for 100% observer coverage for purse seine fishing between 20N and 20S was first established under the PNA's Third Implementing Arrangement in 2008; then under WCPFC's CMM 2011-01.

reviewed and compared for selected species (target tunas, silky sharks and turtles) with the results from the more recent observer data provided to the team. Catch rates for the bycatch were found to be lower in the recent data: 1 turtle was reported as caught for every 41,300 hooks in the recent data and 1 for every 33,300 hooks in the trial; 1 silky shark per 31,000 hooks in the recent data and 1 silky shark per 4,555 hooks in the trial.

3.4.3 Overview of Non-target Catch

The analysis for P2 was made considering that the two UoAs have a common gear type, target stocks, catch composition and management system, and only differ in their flag state.

Analysis of catch composition for UoA vessels has drawn from four information sources:

- mandatory logbooks from UoA vessels that contain details of the retained catch (with some reporting of ETP and discards)
- observer records of the catch composition (both retained and discarded) from trips made by UoA vessels
- observer records of the catch composition (both retained and discarded) from trips by longline vessels not in the UoA that have fished within the Solomon Islands' EEZ in 2015 and 2016
- observer records from vessels both within and outside the UoA fishing in the WCPFC (Peatman et al. 2018). This report includes data on the size of individual fish, which we used to convert reported numbers to weights, and data on the condition of animals on release when caught by longlines.

As observer data for the UoA is very limited, (from only 82 sets by 2 vessels over 3 years), it was necessary to look at data from trips by other vessels using the same gear in the same area as a basis for assessing the likely species composition of the UoA (Table 11). For this assessment, logbook data for 2015 and 2016 were obtained for the entire UoA, as summarised in Table 11. These data were provided as numbers of animals but these have been converted to weights using the information on average weights provided in Peatman et al. (2018). Because of the implementation of shark regulations at the start of 2015, only two years of logbook data are presented in the report. Data for five years were provided, however, (see Table 4 for the target species) and were reviewed to verify that including data from earlier years would not have made any difference to the classification of any species for MSC scoring purposes. The inter-annual variability is not sufficient to have made any material difference to how species would have been classified and using only the more recent two years of data for P2 means that the scoring has been based on data that better reflects current fishing practices. In addition to a ban on shark finning, longline vessels were no longer permitted to target or land sharks as a result of these regulations. Only sharks that were dead upon hauling are now permitted to be landed, with fins naturally attached. This is discussed in detail in Section 3.4.5.1. This regulation has affected both at-sea fishing behavior and the overall catch composition of landed fish. The team, therefore, determined that logbook and observer data prior to 2015 were not representative of the current UoA. It should be noted that the catch composition in the logbook and observer data will be reviewed on an annual basis at surveillance audits.

Logbook and observer data was reported as a number of individuals, while the MSC standard evaluates and classifies catch based on weights. Thus, the 'average' weight of individual species caught on

longline fisheries within the WCPFC was used to convert a number of individuals to weights (Peatman et al. 2018).

Primary species

For the purposes of an MSC evaluation, primary species are those in the catch, and within the scope of the MSC program (fishes or shellfish), and not defined by the client as the target – which by definition is evaluated under Principle 1. Primary species will usually be species of commercial value to either the UoA or fisheries outside the UoA, with management tools controlling exploitation as well as known reference points in place. In addition, the institution or arrangement that manages the species (or its local stock) will usually have some overlap in a jurisdiction with the UoA fishery.

Secondary species

Species associated with the target that is harvested under some management regime, where measures are in place intended to achieve management, and these are reflected in either limit or target reference points are evaluated as Primary species within Principle 2. In contrast, secondary species include fish and shellfish species that are not managed according to reference points. Secondary species are also considered to be all species that are out of the scope of the standard (birds/ mammals/ reptiles/ amphibians) and that are not ETP species. These types of species could in some cases be landed intentionally to be used either as bait or as food for the crew or for other subsistence uses, but may also in some cases represent incidental catches that are undesired but somewhat unavoidable in the fishery. Given the often unmanaged status of these species, there are unlikely to be reference points for biomass or fishing mortality in place, as well as a general lack of data availability.

Main species

For Primary and Secondary species, species may be considered “Main” based on either resilience/vulnerability and catch volume. Species that are not “Main” are Minor. Main and Minor species must meet different Performance Indicators (PIs) in P2.

- **Resilience/vulnerability:** If the species is considered "less resilient" and it is ≥ 2% of the catch, then it is considered Main, otherwise it is considered Minor.
- **Catch volume:** If the species is not considered "less resilient" and it is ≥ 5% of the catch, then it is considered Main, otherwise, it is considered Minor.
- Bait species
- In addition to the consideration of species caught during fishing operations, the assessment must include an evaluation of the bait that is used in the fishery, as required by V 2.0 SA3.1.7. Bait species are classified as primary or secondary species based on the existence/absence of management measures, and then as main or minor species based on catch volumes (i.e. x>5% of total catch).
- Based on catch data and the existence of specific management regulations, only three primary species, bigeye tuna, skipjack, and Pacific bluefin tuna, were identified (Table 9, Table 11, and Table 12,
- Of these primary species, only bigeye tuna at 6% of total catch volume was classified as main. The other two species were secondary primary species.

- Apart from target species and bigeye tuna, the majority of other species were classified as secondary species and were minor secondary species because of low catch volumes (i.e. x<2%). The one major exception was the catch rates of bait species, which ranged from 29-31% of the total catch volume. The bait for this fishery is imported from China and is recorded on import records as 'Frozen Sardine Bait.' No other information on the source fishery or fisheries was available to the assessment team.

Table 10. Summary of the species (by volume) recorded for the Fishery in both logbooks and by observers (total catch includes bait).

Common Name	Scientific name	Logbooks	UoA Observers		SI LL Observers
		% of Total catch	% of Total catch	% of Total catch Discarded	% of Total catch
Tuna					
Albacore	*Thunnus alalunga*	30%	4%	1%	20%
Yellowfin	*Thunnus albacares*	27%	45%	4%	35%
Bigeye	*Thunnus obesus*	6%	8%	1%	6%
Skipjack	*Katsuwonus pelamis*	<1%	<1%	2%	<1%
Pacific bluefin tuna	*Thunnus orientalis*	<1%			
Tuna (unid)	Thunnini	<1%			
Dogtooth tuna	*Gymnosarda unicolor*				
Billfish					
Blue marlin	*Makaira nigricans*	2%	2%	0%	2%
Sailfish (indo-pacific)	*Istiophorus platypterus*	<1%	4%	3%	<1%
Swordfish	*Xiphias gladius*	<1%	<1%	30%	<1%
Short-billed spearfish	*Tetrapturus angustirostris*	<1%	<1%	0%	<1%
Black marlin	*Makaira indica*	<1%	<1%	25%	<1%
Striped marlin	*Tetrapturus audax*	<1%	1%	0%	<1%
Billfish (unid)	Istophoridae - Xiphiidae	<1%			
Other fish					
Wahoo	*Acanthocybium solandri*	<1%	1%	2%	<1%
Oilfish	*Ruvettus pretiosus*	<1%	<1%	0%	<1%
Other fish	Teleostii	<1%			
Opah / moonfish	*Lampris guttatus*	<1%	<1%	0%	<1%
Mahi mahi	*Coryphaena hippurus*	<1%	<1%	7%	<1%
Barracudas (unid)	*Sphyraena spp.*	<1%			
Great barracuda	*Sphyraena barracuda*	<1%	<1%	<1%	<1%
Slender sunfish	*Ranzania laevis*	<1%			
Sickle pomfret	*Taractichthys steindachneri*	<1%	<1%	76%	<1%
Sunfish	*Mola spp*	<1%			
Ocean sunfish	*Mola mola*	<1%	<1%	0%	
Escolar	*Lepidocybium flavobrunneum*	<1%	<1%	0%	<1%
Pomfrets	Bramidae	<1%			<1%
Blackfin barracuda	*Sphyraena genie*	<1%			
Pollack	*Pollachius pollachius*	<1%			
Black snapper	*Apsilus dentatus*	<1%			
Blue sprat	*Spratelloides delicatulus*	<1%			
Sharks & Rays					
Sharks (unid)	Elasmobranchii	<1%			
Blue shark	*Prionace glauca*	<1%	<1%	36%	<1%
Mako sharks	*Isurus spp.*	<1%			<1%
Silky shark	*Carcharhinus falciformis*	<1%	<1%	100%	<1%
Smooth hammerhead	*Sphyrna zygaena*	<1%			
Hammerhead sharks	*Sphyrna spp.*	<1%			
Thresher sharks	*Alopias spp.*	<1%			

Table 11. Proportion of the catch (volume) of the species recorded by observers but not in logbooks. Observers on trips on vessels in the UoA (2014-2016), and from observers on all longline trips in the Solomon Islands EEZ (2016-2017) (data provided by SPC).

Common Name	Scientific name	UoA Observers		SI LL Observers
		% of Total catch	% of Total catch Discarded	% of Total catch
Other fish				
Snake mackerel	*Gempylus serpens*	<1%	100%	<1%
Rainbow runner	*Elagatis bipinnulata*	<1%	0%	<1%
Red sea catfish	*Bagre pinnimaculatus*	<1%	0%	
Drift fish	*Cubiceps gracilis*	<1%	100%	
Omosudid	*Omosudis lowei*	<1%	100%	
Longsnouted lancetfish	*Alepisaurus ferox*			<1%
Shortsnouted lancetfish	*Alepisaurus brevirostris*			<1%
Greater amberjack	*Seriola dumerili*			<1%
Crestfish/unicornfish	*Lophotus capellei*			<1%
Sharks & rays				
Pelagic sting-ray	*Dasyatis violacea*	<1%	100%	1%
Giant manta	*Manta birostris*	<1%	100%	
Oceanic whitetip shark	*Carcharhinus longimanus*	<1%	100%	<1%
Mobula (a.k.a. Devil ray)	*Mobula spp.*	<1%	100%	
Great hammerhead	*Sphyrna mokarran*	<1%	100%	
Sandbar shark	*Carcharhinus plumbeus*	<1%	100%	
Grey reef shark	*Carcharhinus amblyrhynchos*	<1%	100%	<1%
Bigeye thresher shark	*Alopias superciliosus*	<1%	100%	
Shortfin mako shar	*Isurus oxyrhinchus*	<1%	0%	<1%
Longfin mako shark	*Isurus paucus*	<1%	100%	<1%
Turtles				
Flatback turtle	*Natator depressus*	<1%	100%	
Olive Ridley turtle	*Lepidochelys olivacea*	<1%	100%	<1%
Leatherback turtle	*Dermochelys coriacea*	<1%	100%	
Green turtle	*Chelonia mydas*			<1%

Table 12. Summary of non-target species classified as main or ETP. Criteria for ETP status may be NL (recognised in National Legislation), IA (listed in a binding International Agreement such as CITES Appendix I) or IR (out-of-scope species that are on IUCN Redlist as either vulnerable, endangered or critically endangered).

Common name	Scientific name	Managed ?	Less Resilient?	% UoA Catch	Meets ETP criteria?	Reason	WCPFC CMMs	Data deficient?	MSC Classification
Bigeye	*Thunnus obesus*	Yes	No	9%	No		2018-01	No	1° – main
Goldstripe sardinella	*Sardinella gibbosa*	No	No	~30%	No		N/A	No	2° – main (bait)
Silky shark	*Carcharhinus falciformis*	No	Yes	<1%	Yes	NL, IR	2013-08	No	ETP
Oceanic whitetip shark	*Carcharhinus longimanus*	No	Yes	<1%	Yes	NL, IR	2011-04	No	ETP
Flatback turtle	*Natator depressus*	N/A	N/A	<1%	Yes	IA	2018-04	N/A	ETP
Olive Ridley turtle	*Lepidochelys olivacea*	N/A	N/A	<1%	Yes	IA, IR	2018-04	N/A	ETP
Leatherback turtle	*Dermochelys coriacea*	N/A	N/A	<1%	Yes	IA, IR	2018-04	N/A	ETP
Green turtle	*Chelonia mydas*	N/A	N/A	<1%	Yes	IA, IR	2018-04	N/A	ETP

3.4.4 Primary Species

Bigeye tuna is the only main primary species (Table 12), but skipjack and Pacific bluefin tuna are minor primary species. Background on bigeye tuna is provided below but information on skipjack and Pacific bluefin tuna are referenced in the scoring rationales.

Bigeye tuna

Biology

Bigeye tuna (*Thunnus obesus*) inhabit the tropical and temperate waters of the Pacific Ocean between northern Japan (40°N) and the north island of New Zealand (40°S) in the west, and from 40°N to 30°S in the east, except near coastal waters of Central America between 5° and 20°N (Hampton et al. 1998). In the WCPO, logsheet and observer records exist between 40°N and 45°S (Molony 2008).

Genetic analyses have failed to reveal significant evidence of widespread population subdivision in the Pacific Ocean (Grewe and Hampton 1998). While these results are not conclusive regarding the rate of mixing of bigeye tuna throughout the Pacific, they are broadly consistent with the results of SPC's and IATTC's tagging experiments on bigeye tuna. Recent tagging work, however, has suggested that while bigeye tuna in the far eastern and western Pacific may have relatively little exchange, those in the central part of the Pacific between about 180° and 120°W may mix more rapidly over distances of 1000–3000 nautical miles. It is now clear that there is extensive movement of bigeye across the nominal WCPO/EPO boundary of 150°W. Nevertheless, stock assessments of bigeye tuna are routinely undertaken separately for the WCPO and EPO.

Juvenile bigeye tuna and small adults school at the surface in mono-species groups or mixed with other tunas may be associated with floating objects. Adults stay in deeper waters. Bigeye tuna feed on a wide variety of fishes, cephalopods, and crustaceans during the day and at night.

Available data for the WCPO indicate that bigeye tuna begin to be reproductively active from about 100 cm FL and that 100% of individuals >120 cm FL are reproductively mature. Regional variation in maturity-at-length is suspected to occur, and bigeye tuna appears to be reaching maturity at larger sizes in the EPO. Bigeye tuna are multiple spawners that may spawn every 1 or 2 days over several months over periods of the full moon throughout the year in tropical waters. Eggs and larvae are pelagic.

Integrated analyses of tag-recapture and age-at-length data for EPO bigeye (Aires-da-Silva et al. 2014) have estimated lengths (cm) at age (yr) of 1: 55, 2: 91, 3: 123, 4: 147, 5: 165, 6: 177, 7: 185, 8: 191, 9: 194, 10: 196. These mean lengths-at-age are larger than those estimated internally in bigeye WCPO stock assessments, based on fitting to size frequency data.

The natural mortality rate of bigeye tuna is likely to vary with size, with the lower rates of around 0.5/yr for bigeye >40 cm FL (Hampton 2000). Tag-recapture data indicate that significant numbers of bigeye reach at least eight years of age (Hampton and Williams 2005). The longest period at liberty for a recaptured bigeye tuna tagged in the western Pacific at about 1-2 years of age is currently 14 years (SPC

unpublished data). Natural mortality of female bigeye is hypothesized to increase at around the age of reproductive maturity, due to the physiological stresses of spawning, resulting in male-biased sex ratios at a larger size. A more detailed summary of bigeye tuna biology is provided by Molony (2008).

In the WCPO, bigeye tuna are mostly caught as adults by the longline fishery and as juveniles by the purse seine fishery (McKechnie et al. 2017a). The early impacts on the population were primarily attributable to longline fishing, but in recent years, at the WCPO level, the impacts of associated purse seine sets and longline fishing were estimated to be similar (Harley et al. 2014).

Status

The most recent re-assessment for bigeye tuna was presented to the WCPFC-SC in 2018 (Vincent et al. 2018) and confirmed the more optimistic assessment of stock status based on new estimates of bigeye growth that the previous assessment (McKechnie et al. 2017a) had produced. The general conclusions of this assessment were as follows:

- Models that assume the "Updated New growth" estimate depletion to be median($SB_{recent}/SB_{F=0}$) = 0.358 with an 80% probability interval of 0.295 to 0.412 and all models estimate stock above 20%$SB_{F=0}$ (Table 13).
- All models that assume "Updated New growth" estimate a recent recruitment event that has increased spawning potential in the last several years, and it is expected that for the "Old growth" models these recruits will soon progress into the spawning potential and improve the stock status, at least in the short-term.
- Only the "Old growth" and 20° N boundary models estimate spawning potential to be below 20%$SB_{F=0}$ for all models in the set. These models estimate median($SB_{recent}/SB_{F=0}$) = 0.188 with an 80% probability interval of 0.123 to 0.275, which is consistent with the structural uncertainty grid of the 2017 assessment.
- Using a weighting of 3:1 "Updated New : Old growth" as defined by SC13, the recent depletion estimates were median($SB_{recent}/SB_{F=0}$) = 0.334 with an 80% probability interval of 0.157 to 0.403. Of the 144 weighted runs, 21 (14.58%) estimated $SB_{recent}/SB_{F=0}$ below the LRP of 20%$SB_{F=0}$.
- Across the weighted grid, exploitation was estimated at median(F_{recent}/F_{MSY}) = 0.813 with an 80% probability interval of 0.682 to 1.245, where 32 of the 144 models estimated $F_{recent}/F_{MSY} > 1$ (22.22%).

The time series of recent catches are shown in Figure 24. Trajectories of stock depletion are shown in Figure 25 and assessment results are summarised in Figure 26.

The WCPFC-SC14 (WCPFC-SC 2018) agreed to use only the "updated new growth" model to describe the stock status because it considered this to be the best available scientific information. Its advice was:

- Based on the uncertainty grid adopted by SC14, the WCPO bigeye tuna spawning biomass was above the biomass LRP and recent F was very likely below F_{MSY}. The stock was not experiencing overfishing (94% probability $F<F_{MSY}$) and it was not in an overfished condition (0% probability $SB/SB_{F=0}$<LRP).

- Although SC14 considered that the updated assessment was consistent with the previous assessment, SC14 also advised that the amount of uncertainty in the stock status results for the 2018 assessment update was lower than for the previous assessment due to the exclusion of old information on bigeye tuna growth.
- SC14 noted that levels of fishing mortality and depletion differ among regions, and that fishery impact was higher in the tropical region (Regions 3, 4, 7 and 8 in the stock assessment model), with particularly high fishing mortality on juvenile bigeye tuna in these regions. SC14, therefore, recommended that WCPFC15 could continue to consider measures to reduce fishing mortality from fisheries that take juveniles, with the goal to increase bigeye fishery yields and reduce any further impacts on the spawning biomass for this stock in the tropical regions.

Management

CMM 2018-01 contains the latest management measures introduced by the WCPFC for bigeye tuna (and for skipjack and yellowfin). The 2017 and 2018 versions of this CMM removed specific objectives that were in earlier versions that the fishing mortality rates for the key tuna species be reduced to or maintained at levels less than F_{MSY} and replaced these firstly with a general statement of the purpose of the CMM:

"Pending the establishment of harvest strategies, and any implementing CMM, the purpose of this measure is to provide for a robust transitional management regime that ensures the sustainability of bigeye, skipjack, and yellowfin tuna stocks."

In addition, an interim target is provided for bigeye tuna (paragraph 12):

"Pending agreement on a target reference point the spawning biomass depletion ratio (SB/SBF=0) is to be maintained at or above the average SB/SBF=0 for 2012-2015."

Nevertheless, the general objective remains articulated under the section titled "Principles for Application of the Measure":

"… Measures shall ensure, at a minimum, that stocks are maintained at levels capable of producing maximum sustainable yield…"

The Longline measures contained in paragraphs 39-44 and Table 3 of CMM 2018-01 mostly do not apply to the Solomon Islands fleet. Paragraph 43, which restricts catches to a maximum of 2,000 t for Members that had caught less than this quantity in 2004, is the only measure of potential application to the UoA, however Solomon Islands exercises a Small Islands Development State (SIDS) exemption to this limit, under Paragraph 5. Also, the paragraphs on Capacity Limits for Longline vessels in paragraphs 47 – 49 specifically exclude SIDS from their scope. The focus of this CMM for bigeye tuna on other catching nations and on purse seine catches by FAD sets is a reflection of these as having the major impacts on the resource.

Information

The information available on bigeye tuna is generally the same as for the other target species and is collected mainly by the combination of vessel logbooks and observer programs as outlined in section 3.2

above. It includes data on catch weight and effort at an operational level for most fleets, size composition data from observers, tagging data and a range of biological data.

Table 13. Bigeye tuna. Summary of reference points over the 36 models in the structural uncertainty grid within the subset of "Updated New growth" models (both 10°N and 20°N regions) (from Vincent et al. 2018).

	Mean	Median	Min	10	90	Max
C_{latest}	152148	151846	148888	148936	154971	155577
$Y_{F_{recent}}$	154180	153220	133120	141140	170720	172280
f_{mult}	1.291	1.301	0.946	1.075	1.499	1.690
F_{MSY}	0.050	0.049	0.044	0.045	0.054	0.056
MSY	158551	159020	133520	143040	173880	180120
$F_{recent}/F_{\mathrm{MSY}}$	0.789	0.768	0.592	0.667	0.931	1.058
SB_0	1674833	1675500	1261000	1415500	1941000	2085000
$SB_{F=0}$	1841609	1858775	1509007	1632014	2043108	2139644
SB_{MSY}	471956	476050	340700	386600	577400	614200
SB_{MSY}/SB_0	0.281	0.280	0.260	0.262	0.300	0.302
$SB_{MSY}/SB_{F=0}$	0.255	0.255	0.226	0.235	0.280	0.287
SB_{latest}/SB_0	0.456	0.456	0.346	0.392	0.523	0.568
$SB_{latest}/SB_{F=0}$	0.414	0.420	0.298	0.351	0.480	0.526
$SB_{latest}/SB_{\mathrm{MSY}}$	1.633	1.624	1.146	1.306	1.933	2.187
$SB_{recent}/SB_{F=0}$	0.353	0.358	0.251	0.295	0.412	0.452
$SB_{recent}/SB_{\mathrm{MSY}}$	1.394	1.377	0.963	1.117	1.659	1.879

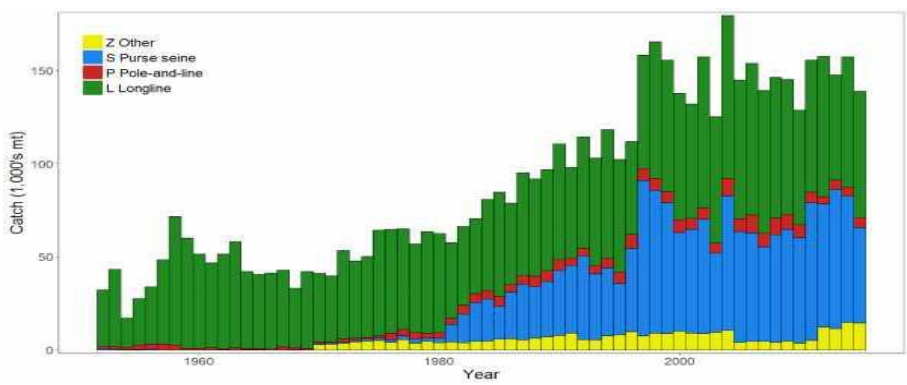

Figure 24. Bigeye tuna. Time series of total annual catch (1000's mt) by fishing gear over the full assessment period (from WCPFC-SC 2018).

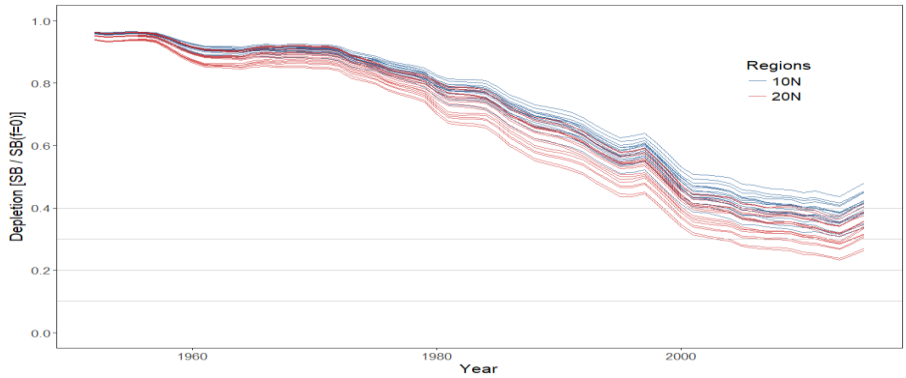

Figure 25. Bigeye tuna. Trajectories of spawning biomass depletion for the 36 model runs included in the structural uncertainty grid. The colors depict the models in the grid with the 10°N and 20°N spatial structures (from WCPFC-SC 2018).

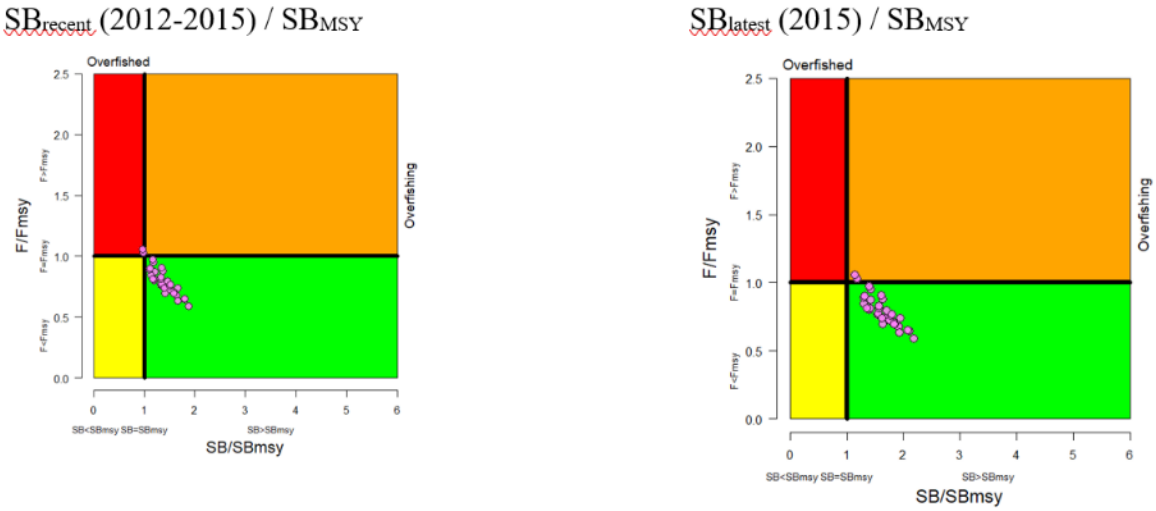

Figure 26. Bigeye tuna. Kobe plot summarising the results for each of the models in the structural uncertainty grid. On the left, the points represent SB_{recent}/SB_{MSY}, where SB_{recent} is the mean SB over 2012-2015. On the right, the points represent SB_{latest}/SB_{MSY}, where SB_{latest} is from 2015 (from WCPFC-SC 2018).

3.4.5 Secondary Species

The catch of non-target species (both retained and discarded) represent a small proportion of the total catch for the UoA vessels in the Solomon Islands longlines fishery. Data provided to the team by SPC is summarized in Table 10 and

Table 11) showed that the total catches of all such species represent less than 10% of the total catch (retained plus discards). As described in Section 3.4.1 the bait used represents approximately 30% of the total catch and, following SA3.1.7, it is evaluated as a main secondary species following the criteria contained in SA3.1.4. The quantities imported annually were 729 t, 594 t and 770 t in 2016, 2017 and 2018 respectively. Usage rates are generally 80-100 g of bait per hook (R Dunham pers. comm.). Pelagic stingray is the most commonly caught species by numbers but still represent less than 1% of the total catch by weight, and therefore is not a main secondary species. Besides bait, there are no other species that meet

the requirements for a main secondary species. Blue marlin represents the largest catch of secondary species by weight but still represent less than 2% of the total catch.

For all minor secondary species, the management objectives are those outlined in the WCPFC Convention text. These include ensuring long term sustainability, preventing overfishing, monitoring the fishery and assessing its impacts, protecting biodiversity, and enforcing CMMs. Even though there are not stock assessments available, the status of most species is known at some level (e.g. according to IUCN categories) and the low levels of the catch of secondary species by the UoAs greatly reduce the risks of these objectives not being achieved. Therefore, even if these species were below any biologically based limits, any type of catch by the UoA vessels would not be hindering their recovery.

Bait

The bait for this fishery is imported from China and is recorded on import records as 'Frozen Sardine Bait.' This bait is delivered to vessels as part of their provisioning in Noro prior to fishing. The client advised, however, that not all vessels purchased Sardine Bait from them. Some vessels may obtain bait from carrier vessels even if unloading in Noro, some vessels may obtain bait when visiting other ports in Fiji or other international ports, and sometimes vessel owner may import containers of bait themselves.

Bait quantity

The quantities of bait used have been estimated by checking import records of the client and by scaling up estimates of the amount of bait needed per hook. Bait import records provided by the client showed that the total quantities of bait imported were 729 t in 2016, 594 t in 2017 and 770 t in 2018.

A single bait fish is placed on each hook. It was reported that 80-100 g of bait is used per hook and that vessels set between 2,500 and 3,000 hooks per day, equating to between 200 kg (80g on 2500 hooks) and 300 kg (100 g on 3000 hooks) of bait per day of fishing. It was reported that UoA vessels in total fish between 2,000 to 2,800 days per year, equating to between 400 t (200 kg for 2,000 days) and 840 t (300 kg for 2,800 days) of bait per year. This range aligns with import volumes provided by the client.

The import records for 2016 and 2017 were used as the best estimate of bait usage by the fleet and added to the data on the total catch to allow estimates of species composition of the catch. In these years bait represented 29% and 31% of the total catch (retained plus bait) respectively.

Bait composition

The client identified the primary bait species as the Goldstripe sardinella (*Sardinella gibbosa*) (pers. comm., Hamilton 2019). Other species sometimes provided by the supplier included *Sardinella zunasi* from Oman, North Pacific, and South Africa, *Sardinella neglecta* from the eastern waters off South Africa, or *Sardinops sagax* from the western waters of South Africa. Qualitative information suggests that Goldstripe sardinella are the predominant bait species used, and this assessment has focused exclusively on evaluating this species. Nevertheless, due to the morphological similarity between other *Sardinella* species, Goldstripe sardine can be commonly confused with *S. fimbriata* (Whitehead 1985).

Bait sources

The client reported that the majority of its bait is *S. gibbosa* sourced from processing factories in China. The client's bait supplying companies purchase product from these factories to match orders in terms of quantity and size. If there is a shortage of the correct-sized bait in China, the bait will be sourced from South Africa, but China is the preferred source. Bait from South Africa is of a higher quality but it was reported that there are limited volumes available and higher in costs from the longer shipping distances. The client has not purchased bait from South Africa for quite a few years.

Goldstripe sardinella (*S. gibbosa)*

The Goldstripe sardinella is widespread in the Indo-West Pacific including the Red Sea but there is possible or even probable confusion with other species that makes published biological data potentially unreliable (https://www.fishbase.se/summary/1508; Thomas et al. 2014; Stern et al. 2016). It is one of the most abundant and commercially important *Sardinella* species in the Indo-West Pacific region (FAO fact sheet, n.d.). Commercial catches of Goldstripe sardinella have steadily increased since the early 1970s (Figure 28). In 2016, 186,980 t were caught (FAO 2018). Therefore, the quantity of bait used by the UoA represents a very small proportion of the total catch and would not be a threat to its sustainability or hindering its recovery. The majority of catches come FAO area 71 but also Area 57. Indonesia is the country with the largest proportion of annual catch (FAO fact sheet n.d).

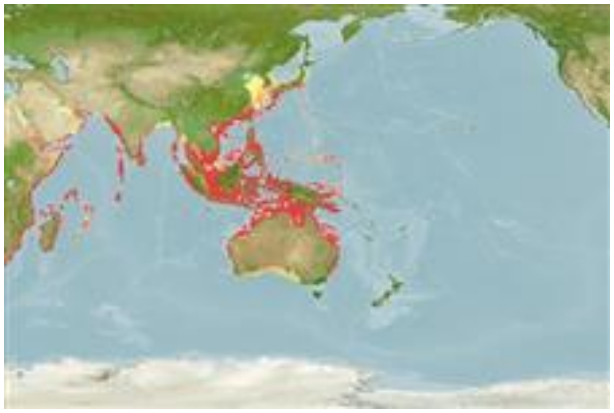

Figure 27. Distribution of *S. gibbosa*

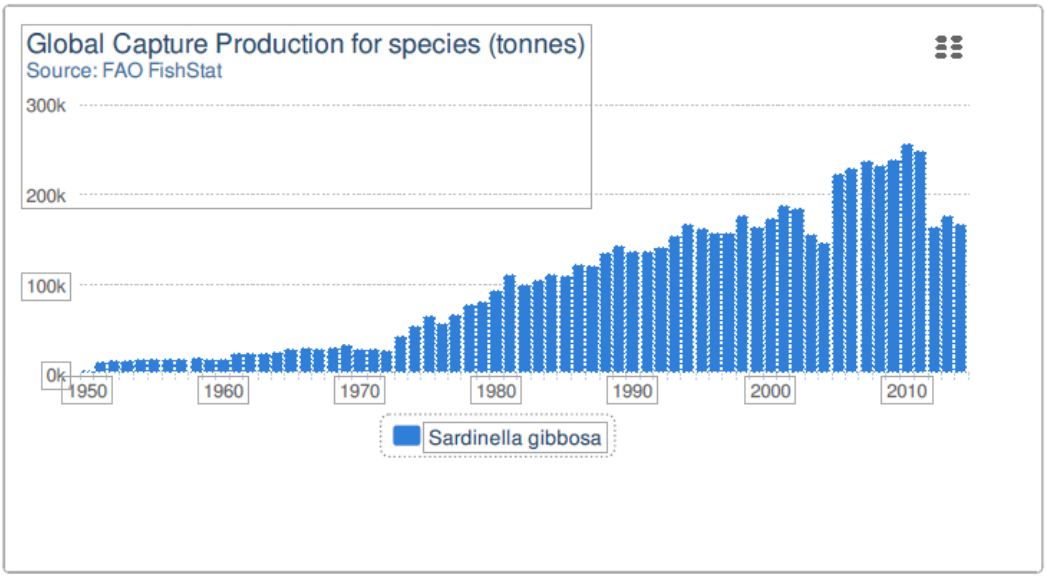

Figure 28 The global capture production for *Sardinella gibbosa* (Goldstripe sardinella) from 1950-2010 (Figure from FAO fact sheet, n.d).

The species is listed as Least Concern by the IUCN, and currently, there is not believed to be any major global threat of commercial exploitation to the species (Santos et al. 2019). There are instances of regional concern in some parts of its range where commercial catches have declined recently (Santos et al. 2019). Several stock assessments have been conducted for the species in regions throughout its range (Sanders and Kedidi 1984; Bennett et al. 1992). No species-specific management measures exist (Hoare 2016).

Though Goldstripe sardinella is believed to be the primary species used for bait in the Solomon Islands fishery, it is not the only species. At this point, the full composition of the bait species and country of origin of catches is unknown.

Shark Finning

Shark finning considerations are detailed here because shark finning is scored under PI 2.2.2.

Most sharks caught by the fishery are assessed as ETP species (see Section 3.4.6) but, when sharks are caught by the fishery, and they are not one of the target species, the FCR v2.0 requires an assessment of whether shark finning is taking place as part of the evaluation of the management strategies under Principle 2. The issue is therefore considered here as background to the evaluation provided under PI 2.2.2.

WCPFC measures

WCPFC's CMM for sharks (CMM 2010-07) includes the following requirements:

6. 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.

7. CCMs shall require their vessels to have onboard fins that total no more than 5% of the weight of sharks on board up to the first point of landing. CCMs that currently do not require fins and carcasses to be offloaded together at the point of first landing shall take the necessary measures to ensure compliance with the 5% ratio through certification, monitoring by an observer, or other appropriate measures. CCMs may alternatively require that their vessels land sharks with fins attached to the carcass or that fins not be landed without the corresponding carcass.

8. As finer resolution data become available, the specification of the ratio of fin weight to shark weight described in paragraph 7 shall be periodically reviewed by the Scientific Committee (SC) and the SC will recommend any appropriate revisions to the Commission for its consideration. The SC and the Technical and Compliance Committee (TCC) are directed to consider if additional appropriate measures that give effect to paragraph 7 are required.

9. CCMs shall take measures necessary to prohibit their fishing vessels from retaining on board, transshipping, landing, or trading any fins harvested in contravention of this Conservation and Management Measure (CMM).

10. In fisheries for tunas and tuna-like species that are not directed at sharks, CCMs shall take measures to encourage the release of live sharks that are caught incidentally and are not used for food or other purposes.

The SC10 report noted that there were no specific documents to address the efficacy or effectiveness of this CMM and that the SC has not been able to assess the specification of the ratio of fins-to-carcass weight, as CMM 2010-07 required. Concerns had also been expressed at the Technical and Compliance Committee (WCPFC-TCC 2014) about ambiguity in a number of provisions in this CMM, particularly the fin-to-carcass ratio, that made it is impossible to determine compliance standards for the measure. At SC12 these concerns were re-iterated and the SC concluded that:

"SC12 was unable to confirm the validity of using a 5% fin to carcass ratio in CMM 2010-07 and forwards these concerns to TCC, noting that an evaluation of the 5% ratio is not currently possible due to insufficient information for all but one of the major fleets implementing these ratios. SC12 took note of SC12-EB-IP-02 that confirms that the information which can be used to evaluate the effectiveness of the WCPFC ban on shark finning (CMM 2010-07) is currently very limited."

The subsequent TCC meeting agreed and recommended to the Commission that "WCPFC13 recognize that it is not possible for TCC to assess compliance related to the application of the 5% ratio prescribed in para. 7 of CMM 2010-07."

Therefore, although WCPFC has measures intended to prohibit the practice of shark finning, it is not currently able to determine whether this objective is being achieved.

Solomon Islands' measures

National Fisheries Regulations (2017) specify that it is an offense to engage in shark finning and to possess, store, transship or land, or attempt to transship, land, buy or sell any shark fin (including the tail) that is not naturally attached to the whole corresponding carcass.

License conditions specify that any shark species that are caught incidentally, for which fishing is not permitted, whether by the Fisheries Act, Regulations and any regional conservation and management measure, must be released as soon as possible after the shark is brought alongside the vessel in a manner that causes as little harm as possible. These conditions also require that all sharks retained on board must have their fins naturally attached to the carcass.

Only catches from trips that are entirely within the Solomon Islands EEZ are eligible for certification and the catches from all such trips are inspected in port. Both the unloaded catch and any catch that is retained on the vessel are recorded.

PNA measures

Banks et al. (2011) noted that the PNA had also raised the issue of finning through WP9 –Application of Management Arrangements for Sharks, submitted to the PNA 29th Special Meeting in February 2010; that at this meeting it was agreed to discuss the issue of shark finning at their Annual Meeting; and that it was suggested in WP9 that a prohibition on shark finning should be considered in a package of management arrangements for a fourth implementing arrangement. A fourth implementing arrangement has not yet been agreed so no measure regarding shark finning is yet in place through measures adopted by the PNA process, and CMM 2010-07 remains the key binding management measure.

3.4.6 Endangered, Threatened and Protected (ETP) Species

As outlined in Table 12, there are six species that have been recorded as being caught by UoA vessels that are classified as ETP species: silky shark, oceanic whitetip shark and four species of turtles.

Silky Shark and the Oceanic Whitetip Shark are classified as ETP species because they are designated as protected species under Solomon Islands legislation.

The turtles are classified as ETP species because they are on Appendix I of CITES. All of these species except the Flat-backed Turtle *Natator depressus* (which is classified as Data Deficient) are also listed as vulnerable, endangered, or critically endangered on IUCN's Redlist.

There are species of sharks that are caught by the UoA that are listed as vulnerable, endangered or critically endangered by the IUCN, but these are not recognized as ETP under MSC processes in which a species IUCN status is only considered if it is a member of an out-of-scope group (SA3.5.1.3).

GSA3.1.5 requires that, in situations where data on interactions with ETP species is are limited, the assessment team should take a more inclusive approach (i.e., all ETP species in the geographic area). There are limited data available on interactions with ETP species for this fishery, and therefore we have considered other ETP species that may not have been represented in the available data but which may nevertheless be present and vulnerable to capture on longlines. For this reason, we have used the information provided by Peatman et al. (2018), that provides data based on a greater number of observer records for longline fishing in the WCPO. We considered catches reported from both shallow sets and deep sets, and from both tropical (between 10°N and 10°S) and southern temperate zones (south of 10°S) as the Solomon Islands EEZ overlaps with both these zones. The additional ETP species identified as being

at possible risk of capture by the UoA were hawksbill turtles (*Eretmochelys imbricata*) and loggerhead turtles (*Caretta caretta*) both of which are listed on Appendix I of CITES.

We also note that, following Table GSA3, for ETP species, the combined impacts of MSC UoAs only needs to be evaluated in cases where either national and/or international requirements set catch limits for ETP species. There have been no national and/or international requirements set for any of the ETP species we have identified, therefore there is no need to evaluate the combined impacts of other MSC UoAs.

Seabirds, and particularly albatrosses and gadfly petrels, are another group with potential impacts from longline fishing in the WCPFC Convention Area. These risks have been evaluated (Filippi et al. 2010) based on the overlaps of species distribution, fishing effort and accounting for differences in productivity and susceptibility. This study found that risks are lowest from fishing near the equator and are higher in higher latitude areas (Figure 29). WCPFC has adopted a succession of CMMs to address these risks, the most recent being CMM 2018-03 which extended the area considered to be high risk from 30°S to 25°S based on updated analyses of areas of greatest risk for some species. The Solomon Islands EEZ extends from 4.1422°S to 16.1269°S, and so lies well northward of this newly agreed high-risk zone. The limited observer coverage has not detected any seabirds as having been caught by longliners in the Solomon Islands EEZ, but we place more weight on the broader analysis of risks to seabirds. We have concluded that seabirds are not a group that requires further evaluation.

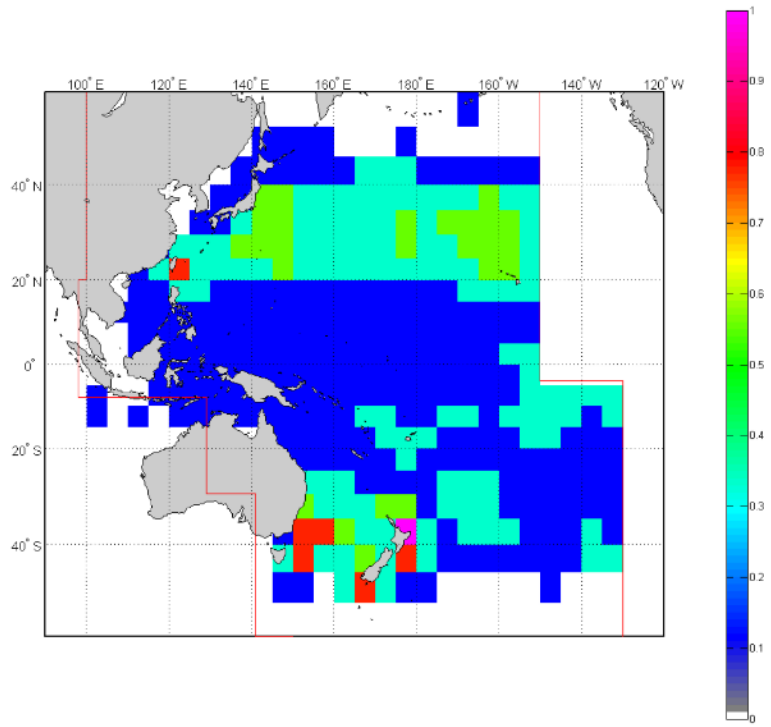

Figure 29. Risks for seabirds: areas of likely species-level effects of fishing in the WCPFC Convention Area. Highest risk areas - pink, Medium-high - orange; Medium – green; Medium-low – pale blue; Low – dark blue; Negligible risk – White (from Filippi et al. 2010).

Silky Shark

Biology

Bonfil (2008) reported that on the basis of differences in life-history parameters, it was possible to identify at least three distinct populations of silky sharks (*Carcharhinus falciformis*) inhabiting the Northwest Atlantic, the western-central Pacific, and the eastern Pacific. Genetic analysis of animals from the Pacific Ocean has also provided evidence that there are distinct eastern and western Pacific populations (Galván-Tirado et al. 2013) although the possibility of a single stock could not be excluded. Within the WCPO a single stock is assumed for stock assessment purposes. New genetic analyses based on samples from across 5 regions of the Pacific Ocean, including off the coast of Taiwan, Papua New Guinea, the South Central Pacific, the North Central Pacific, and the Eastern Pacific, found significant population structure between all five regions (Kraft et al. 2018). These findings have yet to be incorporated into stock assessments or management advice.

The silky shark is an abundant offshore, oceanic and epipelagic and littoral, tropical species, found near the edge of continental shelves and islands but also far from land in the open sea. Silky shark occasionally occurs inshore where the water is as shallow as 18 m, are most often found at depths of 200 m or more in the epipelagic zone but also occur down to at least 500 m depth offshore (Bonfil et al. 2009). The silky shark is often found over deepwater reefs and slopes near islands.

Silky sharks are viviparous, with a yolk-sac placenta and have 2 to 14 young per litter. There seems to be no pronounced seasonality in the birth of young. The gestation period is not known. It is primarily a fish-eater, eating pelagic and inshore teleosts including sea catfish, mullet, mackerel, yellowfin tuna, albacore, and porcupine fish, but also squid, paper nautiluses, and pelagic crabs. It reaches a maximum size of about 330 cm; males mature at about 187 to 217 cm and reach 270 to 300 cm; females mature at 213 to 230 cm and reach at least 305 cm; the size at birth is about 70 to 87 cm.

The FAO considers the species to have a mid-range intrinsic rebound potential. Rice and Harley (2012) regard silky sharks as a low productivity species. A more detailed description of the distribution, biology, and growth of silky sharks is contained in Rice and Harley (2012).

Status

Using data from observers across all WCPFC fisheries the estimate the total catch of silky shark by longlines over the most recent five years (2013-2017) has varied between 126,300 (95% CI 91,000-186,000) animals (2014) and 207,300 (95% CI 154,000-287,000) animals (2016) (Peatman et al. 2018).

A previous stock assessment of silky sharks in the West and Central Pacific Ocean using Stock Synthesis (Rice and Harley 2012) concluded that overfishing was occurring and that it was highly likely that the stock was in an overfished state. This assessment also estimated that catches by both the purse seine (associated sets) and longline sectors were important sources of fishing mortality.

The results of new assessment work were presented to the WCPFC-SC in 2018 that included both an attempt at a Pacific-wide assessment (Common Oceans (ABNJ) Tuna Project 2018a) and an updated WCPO only assessment (Common Oceans (ABNJ) Tuna Project 2018b). The Pacific-wide assessment concluded that estimates of management quantities such as SB/SB_0 and F/F_{MSY} were unreliable and should not be

used as the basis for management advice due to various uncertainties in this Pacific-wide assessment. It did, however, suggest that WCPO and EPO silky shark biomass had substantially declined and that fishing mortality had considerably increased over the last two decades. The conclusions of the WCPO-only model were:

- That the silky shark population was depleted to 47-50% of its original (virgin) biomass. This level of depletion was less than that determined from the 2013 model which estimated the WCPO stock had been depleted to ~30% of the original biomass.
- That current (2016) biomass was likely to be above the MSY reference biomass (i.e. not overfished) ($Pr(SB_{2016} > SB_{MSY}) = 72\%$). In contrast, the 2013 assessment concluded that it was highly likely that the stock was in an overfished state.
- That current (2016) F was 1.6 times the MSY fishing mortality (i.e. overfishing was occurring). This estimate of F_{2016}/F_{MSY} was considerably lower than the 2013 assessment's estimate of 4.48.

The WCPFC-SC accepted the WCPO silky shark stock assessment as best available science for this stock but also noted that, given the inherent uncertainty in the current assessment, the current estimates of stock status should be considered indicative only. It also noted that indications from the 2018 WCPO model show that the stock declined steadily over the model period (1995-2016) (Figure 30). It concluded that, on balance, the WCPO stock of silky was not considered to be overfished, i.e. there was a 78% probability that SB_{2016} was greater than SB_{MSY} (Figure 31).

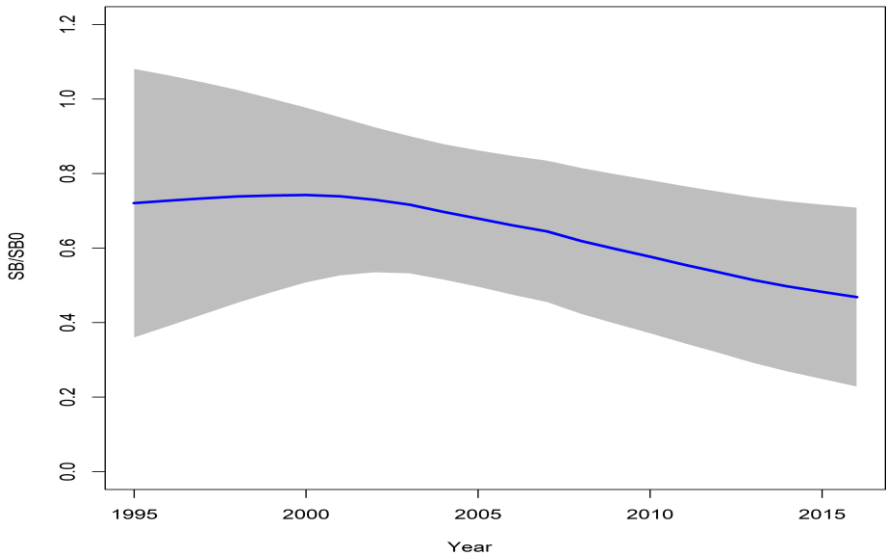

Figure 30. Silky Shark. Estimated spawning biomass relative to unexploited biomass (SB0) for the WCPO assessment model (CPUEqdev) (from WCPFC-SC 2018).

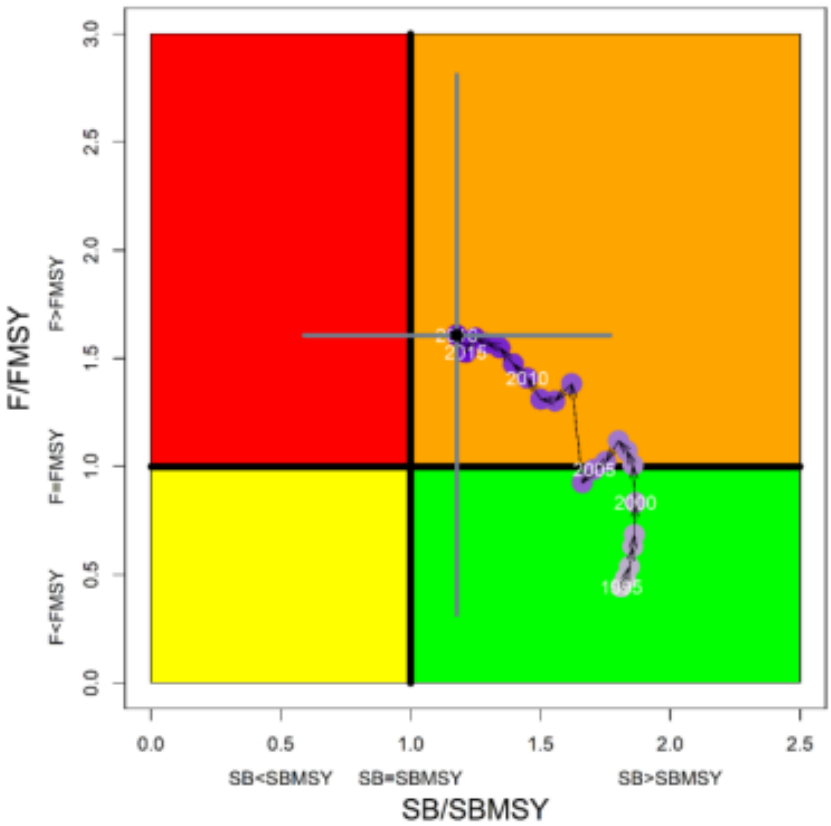

Figure 31. Silky Shark. Kobe plot for the WCPO assessment model (CPUEqdev) (from WCPFC-SC 2018).

Management

In addition to its general CMM for sharks (CMM 2010-07), WCPFC introduced a CMM specifically for silky sharks in 2013 (CMM 2013-08) which contained a variety of measures including the following:

- a prohibition on retaining on board, transshipping, storing on a fishing vessel, or landing any silky shark caught in the Convention Area, in whole or in part, in the fisheries covered by the Convention. (CMM 2010-07 had permitted silky shark to be retained but not just their fins).
- a requirement to release any silky shark that is caught in the Convention Area as soon as possible after the shark is brought alongside the vessel, and to do so in a manner that results in as little harm to the shark as possible. (This is stronger language than CMM 2010-07 which had indicated that "National Plans of Action or other relevant policies for sharks should include measures to minimize waste and discards from shark catches and encourage the live release of incidental catches of sharks).
- a requirement for CCMs to estimate, through data collected from observer programs and other means, the number of releases of silky shark caught in the Convention Area, including the status upon release (dead or alive), and report this information to the WCPFC in Part 1 of their Annual Reports.

This CMM only became effective in 2014 so it is too early to expect its impact on stocks to be detectable. Any retained catches up to 2013 are for a period when it was permissible to retain them.

Furthermore, CMM 2014-05 (which came into effect on 1 July 2015) required the following measures for longline fisheries targeting tuna and billfish:

"1. CCMs shall ensure that their vessels comply with at least one of the following options:

a. do not use or carry wire trace as branch lines or leaders; or

b. do not use branch lines running directly off the longline floats or drop lines, known as shark lines."

Under Solomon Islands Fisheries Management Regulations (2017) silky sharks are one of three protected species of shark (the others being oceanic whitetip sharks and whale sharks). Vessels are prohibited from using wire traces or J-hooks to reduce the likelihood of protected species sharks being caught and must release any captured silky sharks promptly and with minimal harm (Regulation 23. (1) (a)) (see **Figure 32** below). These Regulations provide a stronger measure than that required under CMM 2014-05 which has a choice of options.

Division 3 Shark fishing

Offence concerning sharks

21. (1) This regulation applies to:
    (a) any person carrying out commercial fishing within the exclusive economic zone of Solomon Islands; or
    (b) any person who uses a Solomon Islands fishing vessel for commercial fishing in areas beyond national jurisdiction.
  (2) A person commits an offence who:
    (a) engages in commercial fishing of sharks;
    (b) engages in shark finning;
    (c) possesses, stores, tranships or lands, or attempts to tranship, land, buy or sell any shark fin (including the tail) that is not naturally attached to the whole corresponding carcass;
    (d) possesses, uses or causes to be used a trace wire or J hook for the purpose of fishing.
    Maximum penalty: 500,000 penalty units or 6 months imprisonment, or both.
  (3) The operator of a fishing vessel must release or cause to be released any species of shark that is accidentally caught, , as soon as possible after the shark is brought alongside the vessel, and to do so in a manner that results in as little harm to the shark as possible.
  (4) An operator of a fishing vessel who contravenes sub-regulation (3) commits an offence.
  (5) In this regulation:
    "carcass" means all parts of the shark except for the head and viscera; and
    "shark finning" means the:
      (a) taking of a shark;
      (b) removing its fin or fins (whether or not including the tail); and
      (c) returning the remainder of the shark to the sea.

Protected species of sharks

22. (1) A person commits an offence who:
    (a) retains;
    (b) tranships;
    (c) stores on a fishing vessel or on land;
    (d) sells or exposes for sale; or
    (e) buys or exports in whole or in part, any protected species of shark.

Safe release of protected sharks

23. (1) Despite regulation 22(1):
    (a) if a silky shark is caught accidentally within the fisheries waters, the operator of the fishing vessel must release the silky shark as soon as possible after the shark is brought alongside the vessel, and to do so in a manner that results in as little harm to the shark as possible;

Figure 32. Box 1: Extract from Table of Provisions. Fisheries Management Regulations 2017. Supplement to the Solomon Islands Gazette. Wednesday, 11th January 2017 S.I. No. 2 (Downloaded from https://www.fisheries.gov.sb/fisheries-acts 19 March 2019).

These regulations are reflected in the license conditions on vessels in the UoA which require, among other measures, that

"The Master and Crew of fishing vessel shall:

a) take all reasonable steps to avoid catching and minimize the bycatches of turtles, seabirds, sharks and marine mammals;

b) release those caught in a manner that results in as little harm to the animals and mammals as possible and which provides the greatest chance of survival; and

c) record all incidents involving turtles, sharks, seabirds, and marine mammals during fishing operations and report such incidents to the Director."

Information

The information available on the key shark species is collected mainly by the combination of vessel logbooks and observer programs as outlined in section 3.2 above. It includes data on catch weight and effort at an operation level for most fleets, and some size composition data and biological data. However, both logbook and observer records of catches of silky shark are likely to greatly under-represent the true catch for a number of reasons (Clarke 2018).

Nevertheless, estimates of the quantities of a silky shark taken by different gear types consistently indicate that longlines are responsible for the large majority of the catch of silky sharks (Peatman 2017 and 2018 as reported in Table 5 of Clarke 2018).

Annual Reports to the WCPFC contain data on the numbers of silky sharks caught and retained by locally based foreign longline vessels as recorded in logbooks. These reports do not contain any data on the numbers caught and released by these vessels, which are probably only obtained from observer data, presumably because the number of observed trips has historically been very low. The data from all such observed trips has, however, been provided to the assessment team on request.

There are also reporting requirements contained in the License conditions (see above) that require reports on all 'incidents' involving sharks but data from these reports (if they are indeed completed) were not available to the assessment team.

Even with bans on the retention of silky shark and the requirement for the early release of any sharks caught, reductions in fishing mortality are dependent on the level of survival among released animals. Musyl and Gilman (2018) used satellite pop-up tags to study the post-release mortality of blue shark and silky shark caught in a Palauan based commercial longline fishery and their results suggested that a large proportion of these sharks survived following release. Data from observers, however, suggest that, where the condition of animals had been recorded, similar proportions were dead or were considered likely to have died, as were considered alive (Figure 33).

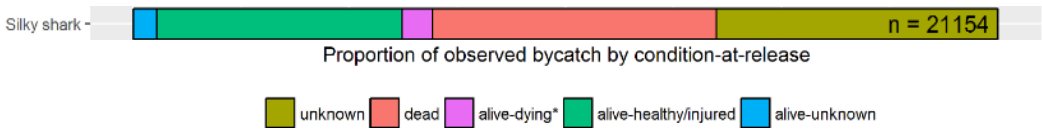

Figure 33. Silky Shark. Recorded condition at the release of the observed silky shark, as a proportion of total observed catch (number of fish) for WCPFC longline fisheries. The number of records is provided (n = … for each species/group). Note – alive-dying* is individuals that alive but considered unlikely to survive (extracted from Figure 20. Peatman et al. 2018).

Oceanic Whitetip Shark

Biology

The oceanic whitetip (*Carcharhinus longimanus*) is an oceanic-epipelagic shark, usually found far offshore in the open sea in waters 200 m deep, between about 30°N and 35°S in all oceans; it is normally found in surface waters, although it has been recorded to 152 m. It has occasionally been recorded inshore but is more typically found offshore or around oceanic islands and areas with narrow continental shelves. Evidence also suggests stock segregation between juveniles and adults of the species; with juveniles more commonly found in equatorial waters to the west and adults more predominate to the southwest, near the identified center of abundance (10°S, 190° E) (Clarke et al. 2011; Lawson 2011). They are viviparous with placental embryonic development, mature at 4 to 5 years of age, and reach 4 m long. Their biology has indicated that it is likely to be a species with low resilience to fishing – even among shark species - and minimal capacity for compensation (Rice and Harley 2012). More details of the biology of this species are provided in Molony (2008). Oceanic whitetip sharks are most often caught as bycatch in the Pacific tuna fisheries, though some directed mixed species (sharks and tunas/billfish) fisheries do exist. For the WCPFC, Rice and Harley (2012) noted that commercial reporting of landings had been minimal, as had information regarding the targeting, and fate of sharks encountered in the fisheries.

Status

Using data from observers across all WCPFC fisheries the estimate the total catch of oceanic whitetip shark by longlines over the most recent five years (2013-2017) has varied between 41,300 (95% CI 34,000-52,000) animals (2017) and 61,800 (95% CI 49,000-81,000) (2015) (Peatman et al. 2018).

Analyses of four different datasets for the WCPO show clear, steep and declining trends in abundance indices and median lengths have decreased significantly providing strong evidence for the depleted state of the oceanic whitetip population in the WCPO (Clarke 2011).

A stock assessment for oceanic whitetip sharks has been undertaken (Rice and Harley 2012) from which some of the main conclusions were:

- Notwithstanding the uncertainties inherent in the input data, the catch, CPUE, and size composition data all showed consistent declines over the period of the model (1995-2009).
- This is a low fecundity species and this is reflected in the low estimated value for F_{MSY} (0.07) and high estimated value for SB_{MSY}/SB_0 (0.424). These directly impacted the conclusions about overfishing and the overfished status of the stock.
- Estimated fishing mortality had increased to levels far in excess of F_{MSY} ($F_{CURRENT}$ / F_{MSY} = 6.5) and across all model runs undertaken estimated F values were much higher than FMSY (the 5th and 95th quantiles are 3 and 20). Based on these results it was concluded that overfishing was occurring.
- Estimated spawning biomass had declined to levels far below SB_{MSY} ($SB_{CURRENT}$ / SB_{MSY} = 0.153) and across all model runs undertaken $SB_{CURRENT}$ was much lower than SB_{MSY} (the 5th and 95th quantiles are 0.082 and 0.409). Based on these results it was concluded that the stock was overfished.

- The greatest impact on the stock was attributed to bycatch from the longline fishery, with lesser impacts from the fleet defined as a targeted longline fleet and from purse seining. (Figure 41).

Management

In addition to its general CMM for sharks (CMM 2010-07), a specific CMM for oceanic whitetips (CMM-2011-04) came into force on January 1st, 2013. Specific measures include:

- Prohibition of vessels of members, co-operating non-members and participating territories (CCMs) to retain and store on-board, transship, or land, in part or whole, any oceanic whitetip in the fisheries covered by the Commission.
- Their release from fishing gear, in a manner that causes the least amount of practical harm.
- To record the number of releases and status (dead or alive) in Part 1 of member states' Annual Report to the Commission through observer program data or other means.

It is too early to expect the impact of this recent CMM on stocks to be detectable.

The Solomon Islands management measures that apply to oceanic whitetip shark are the same as applying to other protected shark species such as silky shark and are described above under silky shark. The only exception is that, although there are specific requirements for silky sharks and whale sharks, there are no specific requirements in the Regulations for the safe release of oceanic whitetip shark under Regulation 23. Such a general requirement, however, is contained with the license conditions for UoA vessels.

Information

CMM 2011-04 requires information to be collected and reported on oceanic whitetip sharks. Rice and Harley (2012) note problems with the data available, but an integrated assessment was still possible.

CMM 2010-07 also contains requirements for CCMs to include information on "key shark species in their annual reporting to the Commission of annual catch and fishing effort statistics by gear type, including available historical data, in accordance with the WCPF Convention and agreed reporting procedures" and that "CCMs shall also report annual retained and discarded catches in Part 2 of their annual report".

Annual Reports to the WCPFC contain data on the numbers of oceanic whitetip shark sharks caught and retained by locally based foreign longline vessels as recorded in logbooks. These reports do not contain any data on the numbers caught and released by these vessels, which are probably only obtained from observer data, presumably because the number of observed trips has historically been very low. The data from all such observed trips has, however, been provided to the assessment team on request.

As noted for silky sharks, there are also reporting requirements contained in the License conditions (see the section on Management under silky sharks) that require reports on all 'incidents' involving sharks but data from these reports (if they are indeed completed) were not available to the assessment team.

An expert workshop on shark post-release mortality tagging studies (Common Oceans (ABNJ) Tuna Project 2017) mentioned no studies, either completed or underway, that had investigated the post-release mortality of oceanic whitetip shark caught on longlines. Data from observers, however, suggest that where the condition of animals has been recorded, a greater proportion were dead, or considered likely to have died, than to have survived (Figure 35).

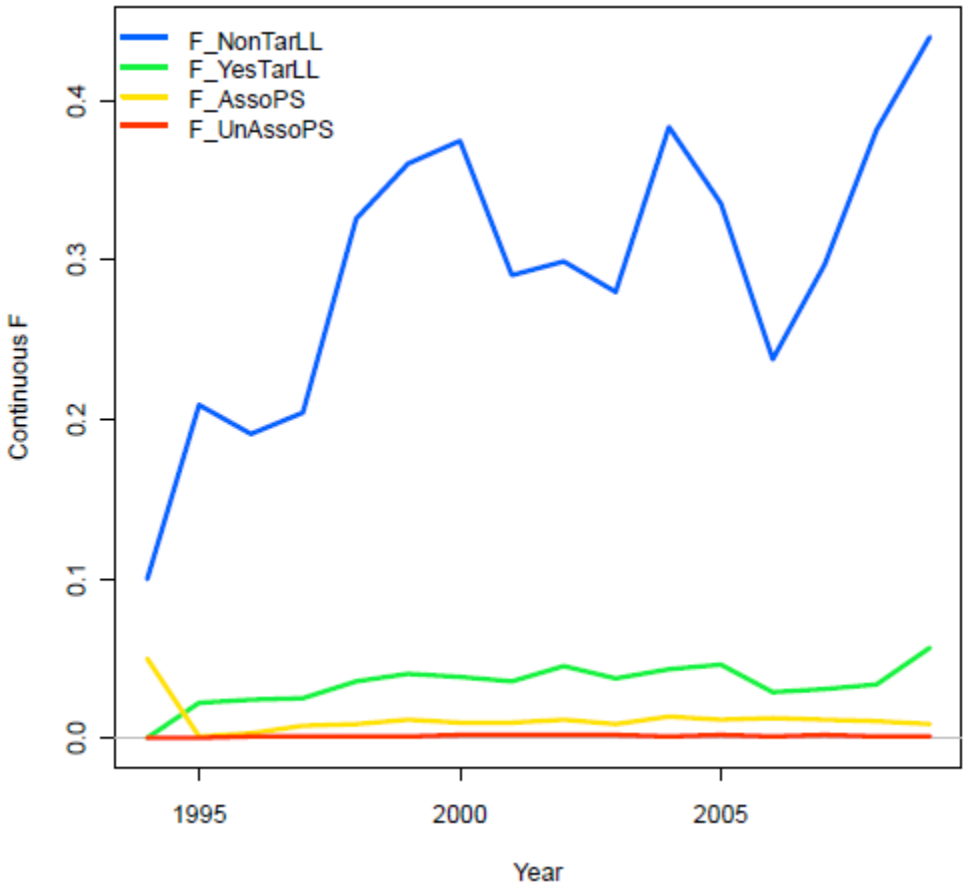

Figure 34. Oceanic whitetip shark: estimated fishing mortality by the fleet for the reference case over the model periods (from Rice and Harley 2012).

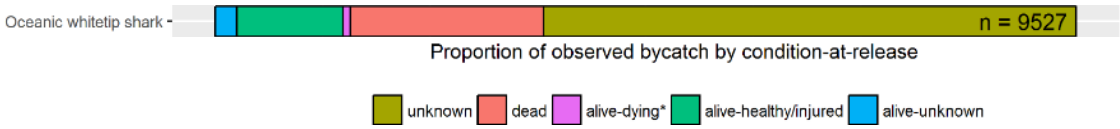

Figure 35. Oceanic whitetip shark. Recorded condition at the release of observed oceanic whitetip shark, as a proportion of total observed catch (number of fish) for WCPFC longline fisheries. The number of records is provided (n = … for each species/group). Note – alive-dying* is individuals that alive but considered unlikely to survive (extracted from Figure 20. Peatman et al. 2018).

Marine Turtles

There were 4 species of marine turtles recorded as having been caught during fishing operations by UoA vessels: Leatherback Turtle *Dermochelys coriacea*, Green Turtle *Chelonia mydas*, Olive Ridley Turtle *Lepidochelys olivacea*, and Flatback Turtle *Natator depressus* (Table 12). As noted above, following GSA3.1.5 we have added hawksbill turtles (*Eretmochelys imbricata*) and loggerhead turtles (*Caretta caretta*) as species which are likely to interact with this fishery based on the data provided by Peatman et al. (2018). Measures to manage the bycatch of turtles are not species-specific so they considered here, and in scoring, as a group.

Status

Using data from observers across all WCPFC fisheries the estimate the total catch of marine turtles by longlines over the most recent five years (2013-2017) has varied between 41,300 (95% CI 34,000-52,000) animals (2017) and 61,800 (95% CI 49,000-81,000) (2015) with a CV for these estimates of 20% (Peatman et al. 2018).

The status of turtles encountered by fisheries in the WCPO has not been specifically examined by WCPFC. Purse seine fisheries have been identified as one of the types of fisheries that constitute a threat for Olive Ridley turtles but the relative contribution of the different gear types is not indicated (SCS 2015).

Capture rates recorded by observers on UoA vessels for all turtles combined were 1 turtle for every 43,000 hooks.

Management

The WCPFC has adopted CMM 2008-03 for sea turtles which require CCMs to implement the FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations and to ensure the safe handling of all captured sea turtles, in order to improve their survival. Best practice guidelines to ensure the survival of captured sea turtles are also outlined and obligatory to follow.

Under Solomon Islands Fisheries Management Regulations (2017) there several measures required of fishing vessels to reduce the likelihood of capture of non-target groups with specific requirements to reduce the mortality of any turtles that are captured incidentally (see Box 2 below)

Schedule 3 (Regulation 52)
Obligations for certain fishing vessels
7. A master, operator or crew of all fishing vessels except for bunker and carrier vessels must:
(a) take all reasonable steps to avoid catching and to minimise the bycatches of turtles, sharks, seabirds and marine mammals;
(b) release those caught in a manner that results in as little harm to the animal and mammals as possible and which provides the greatest chance of survival; and
(c) record all incidents involving turtles, sharks, seabirds, and marine mammals during fishing operations and report such incidents to the Director.

Figure 36. Box 2: Extract from Table of Provisions. Fisheries Management Regulations 2017. Supplement to the Solomon Islands Gazette. Wednesday, 11th January 2017 S.I. No. 2 (Downloaded from https://www.fisheries.gov.sb/fisheries-acts 19 March 2019).

These regulations are reflected in the license conditions on vessels in the UoA which require, among other measures, that

"The Master and Crew of fishing vessel shall:

a) take all reasonable steps to avoid catching and minimize the bycatches of turtles, seabirds, sharks and marine mammals;

b) release those caught in a manner that results in as little harm to the animals and mammals as possible and which provides the greatest chance of survival; and

c) record all incidents involving turtles, sharks, seabirds, and marine mammals during fishing operations and report such incidents to the Director."

Information

CMM 2008-03 details reporting requirements for CCMs and includes the obligation to specifically report in CCM annual reports the progress of the implementation of the FAO Guidelines and this CMM, including information collected on interactions with sea turtles in fisheries managed under the Convention.

Annual Reports to the WCPFC contain no data on the numbers of marine turtles caught and released by locally based foreign longline, presumably because the number of observed trips has historically been very low. The data from all such observed trips has, however, been provided to the assessment team on request.

As noted above, data from the reports that are apparently mandated in the license conditions for all 'incidents' involving turtles (if they are indeed completed) were not available to the assessment team.

The condition of marine turtles caught by longlines in the WCPFC as recorded by observers, suggests that post-release survival varies among species. Where the condition at release was recorded for those species known to interact with UoA vessels, a higher proportion were dead or considered unlikely to survive, than likely to survive, for Olive Ridley Turtles and Green Turtles; the opposite was the case for Leatherback turtles but the condition was unknown for a higher proportion of this species (Figure 37). The general category of Marine turtles NEI (not elsewhere indicated), which presumably included Flat-backed Turtles,

was intermediate between the others but also with a higher proportion that was considered dead or unlikely to survive.

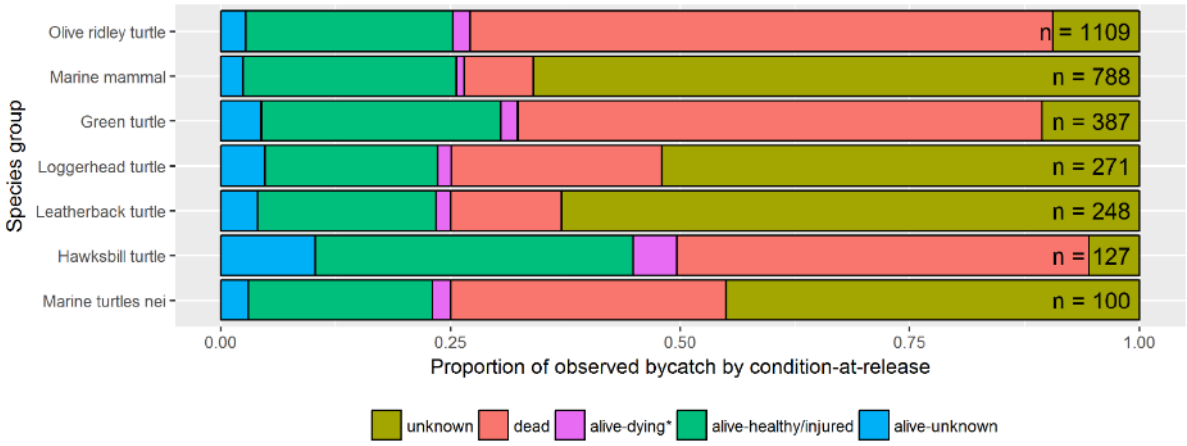

Figure 37. Marine turtles. Recorded condition at the release of observed species of marine mammals and sea turtles catch by species/species group, as a proportion of total observed catch (number of specimens) for the species/species group in the longline fisheries. The number of records is provided (n = … for each species/group). Note – alive-dying* is individuals that alive but considered unlikely to survive (from Peatman et al. 2018).

3.4.7 Habitat Impacts

Overview

When assessing the status of habitats and the impacts of fishing, teams are required to consider the full area managed by the local, regional, national, or international governance body(s) responsible for fisheries management in the area(s) where the UoA operates (this is called the "managed area" for assessment purposes). In this case, the relevant managed area is the Solomon Islands EEZ.

According to MSC FCRv2.0 SA3.13.3, the assessment team must determine and justify which habitats are commonly encountered, vulnerable marine ecosystems (VMEs), and minor (i.e., all other habitats) for scoring purposes, [where]:

- "A commonly encountered habitat shall be defined as a habitat that regularly comes into contact with a gear used by the UoA, considering the spatial (geographical) overlap of fishing effort with the habitat's range within the management area(s) covered by the governance body(s) relevant to the UoA; and
- A VME shall be defined as is done in paragraph 42 subparagraphs (i)-(v) of the FAO Guidelines7 (definition provided in GSA3.13.3.2[6]) [as having one or more of the following characteristics:

[6] According to MSC FCRv2.0 GSA 3.13.3.2: "*VMEs have one or more of the following characteristics, as defined in paragraph 42 of the FAO Guidelines:*

- Uniqueness or rarity – an area or ecosystem that is unique or that contains rare species whose loss could not be compensated for by similar areas or ecosystems

uniqueness or rarity, functional significance, fragility, Life-history traits of component species that make recovery difficult, and/or structural complexity]. This definition shall be applied both inside and outside EEZs and irrespective of depth."

Both commonly encountered and VME habitats are considered 'main' habitats for scoring purposes (GSA3.13.3).

Habitat Type: Commonly Encountered

The fishing gear does not physically interact with benthic habitat during its operation. Any impacts of the fishery will, therefore, be confined to direct or indirect effects on the surface waters in which the fishery operates. This is considered to constitute a single habitat type that is essentially open ocean water. The ability of this habitat to support the target fish populations is related to temperature, salinity and nutrient levels which determine the productivity of the lower trophic levels. These are primarily driven by variations in basin-wide weather patterns through their effect on the frequency, location, and strength of upwelling events, eddy systems and thermal fronts. Longline fishing is not considered capable of affecting these key habitat drivers at a broad scale or even local levels of productivity.

It is therefore appropriate that no particular management measures are in existence which is designed to avoid or mitigate impacts on this marine habitat and no further consideration is given to habitats here.

Vulnerable Marine Ecosystems (VME)

The Solomon Islands Longline fishery does not interact with any VMEs. The pelagic habitat does not have any of the characteristics of VMEs outlined in GSA3.13.3.2 with regard to uniqueness or rarity, functional significance, fragility, life history traits of the component species, or structural complexity.

3.4.8 Ecosystem Impacts

Status

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

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- Functional significance of the habitat – discrete areas or habitats that are necessary for survival, function, spawning/reproduction, or recovery of fish stocks; for particular life-history stages (e.g., nursery grounds, rearing areas); or for ETP species
- Fragility – an ecosystem that is highly susceptible to degradation by anthropogenic activities
- Life-history traits of component species that make recovery difficult – ecosystems that are characterised by populations or assemblages of species that are slow growing, are slow maturing, have low or unpredictable recruitment, and/or are long lived
- Structural complexity – an ecosystem that is characterised by complex physical structures created by significant concentrations of biotic and abiotic features"

and functions and the key determinants of the ecosystem resilience and productivity" (SA3.16.3 MSC 2014).

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).

Defining the key ecosystem elements that are applicable to the UoAs is not clear cut and for the purposes of this assessment, we have considered a broad range of features and measures from studies at a range of scales. The pelagic ecosystems that support the south Pacific albacore and yellowfin tuna fisheries in the WCPO are spread over very broad spatial scales and are influenced by oceanographic and climatic factors beyond the fishery boundaries. Relevant studies include studies of trophic relationships (e.g. Kitchell et al. 1999), studies at scales that are smaller than the whole fishery (e.g. modeling of the 'warm pool' by Allain et al. 2015), and modeling of the whole Pacific Ocean (e.g. Sibert et al. 2006). Each has been examined for evidence of impacts of the fishery on the structure and function of the ecosystem.

Trophic Relationships

Adult south Pacific albacore and yellowfin tuna are high trophic level species, second-tier apex predators below sharks, swordfish, marlin and other billfish (Kitchell et al. 1999). They are major biomass components of the apex guild, represented by strong responses in a diversity of food web components (Kitchell et al. 1999). Their diet of a variety of pelagic and mesopelagic species and their trophic position assure an important role as they themselves are prey for higher apex predators. Tunas are considered the most effective generalists in the system as they are abundant opportunistic carnivores with high degrees of trophic interaction and diet overlap (Kitchell et al. 1999). Ecosystem modeling indicated that adult south Pacific albacore and yellowfin have critically important ecosystem roles. Their removal evoked substantial and sustained changes in the structure of the system (Kitchell et al. 1999).

Allain et al. (2007) constructed a trophic mass-balance ecosystem model of the Warm Pool/Cold tongue pelagic ecosystem using Ecopath with Ecosim software (Figure 38). They 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. This model indicated that the ecosystem responds to both top-down and bottom-up processes, and has the characteristics of a complex form of 'wasp-waist' structure where the majority of the system's biomass is comprised of mid-trophic level groups. Significant complexity was further added through the effects of climate change, including increased sea surface temperature leading to changes in ocean stratification dynamics and changes in the depth of the thermocline. A combination of increased fishing and climate change produced complex trophic cascades, causing unpredictable increases and decreases in the biomass of groups representing all trophic levels, similar to unpredictable wasp-waist ecosystems in productive temperate ecosystems.

Warm Pool Pelagic Ecosystem Evaluation

A further study (Allain et al. 2015) has examined a more restricted area of the warm pool pelagic ecosystem (Figure 39) using Ecopath with Ecosim (www.ecopath.org) to provide information on the potential impacts of tuna fishing. This ecosystem model was characterized by five trophic levels, a high number of trophic links between groups, and a diverse pool of prey for predators. In the model, the majority (74%) of the ecosystem's biomass was in trophic levels 1–2 (phytoplankton, zooplankton), whereas 89% of the industrial fish catch (tuna, edible bycatch and other top predators) was in trophic levels 3–5. The model was used to explore nine different scenarios of fishing effort, ranging from measures designed to reduce and/or increase the amount of bycatch, decrease and/or increase the amount of tuna harvested by altering the amount of longline fishing and purse-seine fishing effort on free swimming schools and on schools associated with FADs. The modeling showed that the warm pool ecosystem structure 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 consumes a wide range of prey. The structure of the ecosystem was most sensitive to changes in the biomass of prey groups (e.g. small pelagic fish such as anchovy).

This more recent model of the warm pool (Allain et al. 2015), however, covered only a part of the WCPO (Figure 39) and substantial catches of south Pacific albacore and yellowfin tuna are taken from waters outside the modeled area, so it is unclear whether the findings of this study would apply to other areas of the WCPO.

Pacific Ocean Ecosystem Evaluation

At a broader scale, Sibert et al. (2006) described biomass trends of exploited populations of top-level predators in the whole Pacific Ocean (the WCPO and the Eastern Pacific Ocean combined) (Figure 40) and compares them to estimated biomass projections had the fishery never been exploited. This study found that the trophic level of the catch had decreased slightly, but no such decrease was apparent in the population trophic level (Sibert et al. 2006). Overall, findings indicated that tuna fishery impacts on the Pacific Ocean ecosystem were likely to be minor.

Additional Considerations

Many of the ecosystem-related studies focus on longline fisheries and FAD-associated purse seine fisheries.

A major consideration in the relationship between fishing and the ecosystem is the impact of climate change. Tuna stocks are particularly susceptible to the effects of environmental change. In addition to the seasonal, inter-annual and decadal variability in the WCPO (e.g. the El Niño Southern Oscillation - ENSO), projected changes in the marine environment over the coming decades include increases in sea surface temperature, sea level rise, ocean acidification and increases in precipitation. A shift in feeding and spawning grounds is also anticipated to shift to more favorable conditions in the eastern Pacific Ocean away from the current western equatorial region, as well as an extension to higher latitudes (Lehodey et al. 2013a).

Overall, the above modeling studies, together with results of the stock assessments of the main species (described under Principle 1) suggests it is unlikely that the tuna harvested by the UoA vessels in Solomon Islands waters is having an irreversible impact on ecosystem functioning.

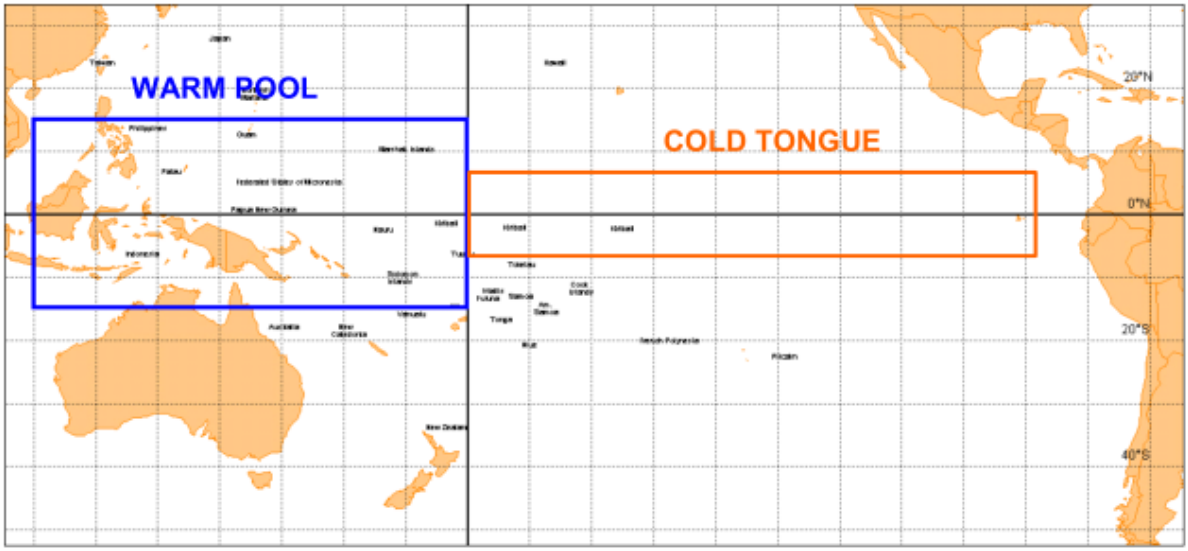

Figure 38. Spatial extent of the warm pool – cold tongue system in the Pacific Ocean (from Allain et al. 2007).

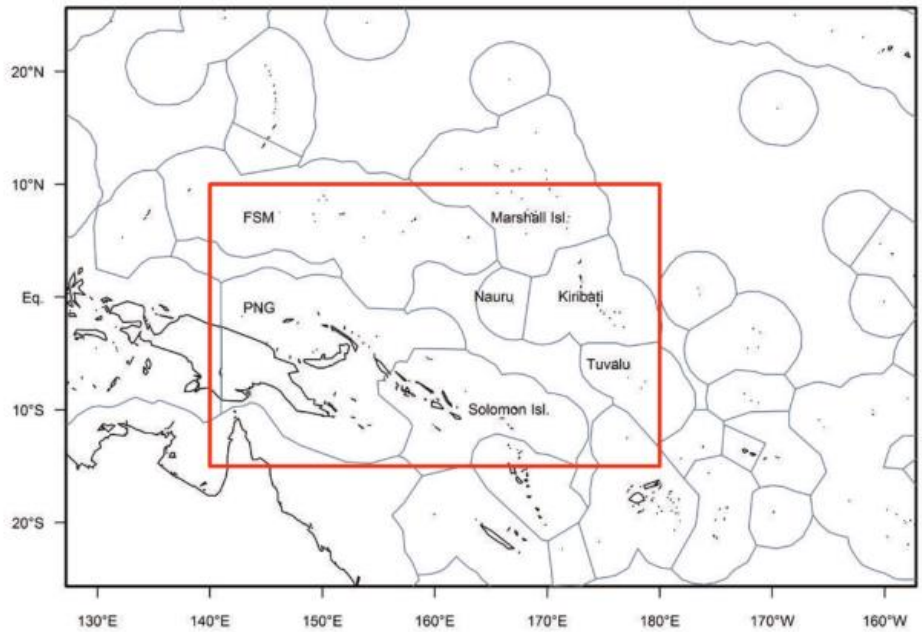

Figure 39. The boundaries of the area covered by the warm pool ecosystem model, and the exclusive economic zones of the countries included in the model. FSM = Federated States of Micronesia; PNG = Papua New Guinea (from Allain et al.2015).

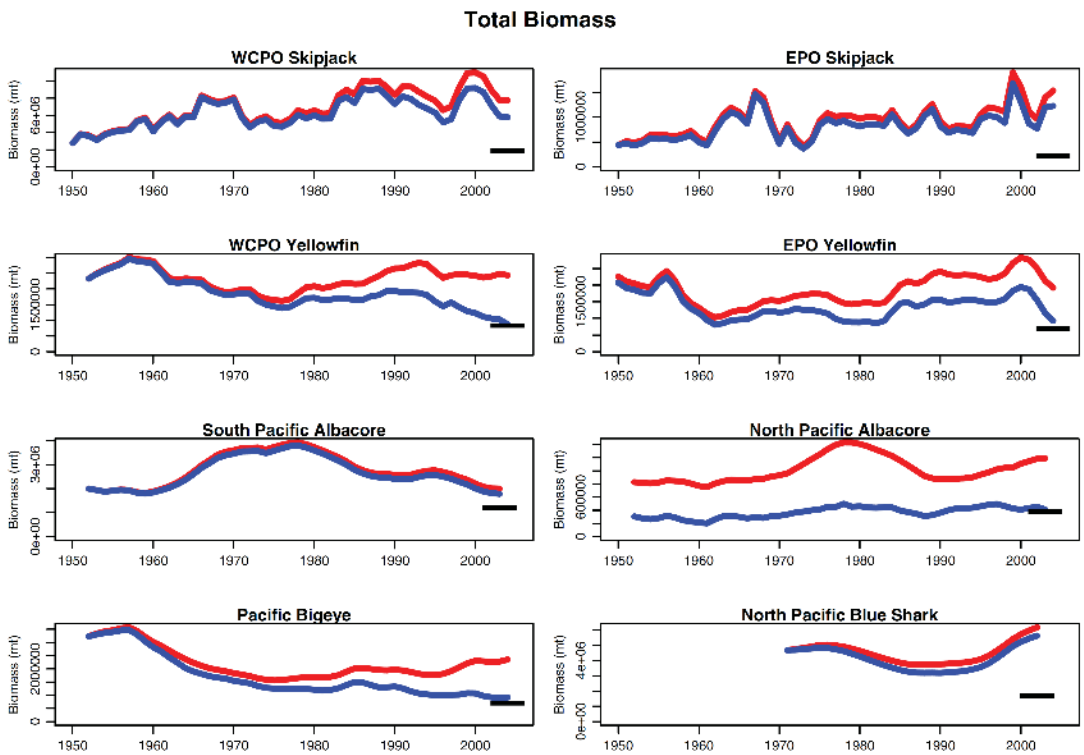

Figure 40. Trends in total biomass for eight stocks of large predators in the Pacific Ocean. The blue line represents the former case, the red line the latter. The single black line indicates the equilibrium biomass corresponding to maximum sustainable yield conditions, assuming current levels of recruitment and distribution of fishing mortality among fisheries. (from Sibert et al., 2006)

Management

The FAO Code of Conduct for Responsible Fisheries (1995) provides a reference framework for sustainable fisheries addressing ecosystem considerations, principles, and goals needed for an Ecosystem Approach to Fisheries Management (EAFM). The Code is voluntary, although parts are based on international law, including the 1982 United Nations Convention on the Law of the Sea (UNCLOS). One of the principles of the Code is that management measures should not only ensure the conservation of target species but also species belonging to the same ecosystem. This approach is now explicit in the WCPFC Convention, although tuna fisheries remain managed on the single-species basis and there does not appear to be integrated domestic and international strategies to manage the ecosystem components of this fishery.

The ecosystem roles of south Pacific albacore and yellowfin tuna are not explicitly considered within management decisions, but the overarching goal of managing to MSY levels (or above) implicitly takes this into account. In turn, consideration of the wider fishery implications, through the basis of management on the outcomes of the WCPFC assessments, supports the management strategy.

Since 2005, the FFA has supported in-country work to generate EAFM reports intended to provide the basis for the development of operational and/or tuna management plans. To assist member countries to implement EAFM, the FFA have developed a Pacific Islands Forum Fisheries Agency EAFM Framework. This framework comprises a number of stages, which lead to the eventual identification and prioritization

of issues related to the current state of tuna resources, environment and social-economics (Fletcher 2008). This then leads to the eventual programming of priority activities into the operational framework and action plans. The process takes into account ecosystem considerations in the management of tuna fisheries. EAFM reports have been completed for the Cook Islands, Federated States of Micronesia, Palau, Tonga, and Vanuatu but not to our knowledge by the Solomon Islands.

Information

As well as collecting data on target species taken in the WCPO fishery, there has been and continues to be a collection of information for and assessments of a wide range of other components of the WCPO ecosystem, including:

- data on the bycatch of large purse-seine vessels and other fishing operations;
- data on the spatial distribution of the bycatch and the bycatch/catch ratios, collected for analysis of policy options to reduce bycatches;
- information to evaluate measures to reduce bycatch, such as closures, effort limits;
- assessment of habitat preferences and the effect of environmental changes.

This effort occurs through observer programs (e.g. bycatch composition and quantities), trophic analyses (e.g. stomach contents, stable isotopes), and mid-trophic level sampling (e.g. acoustics and net sampling of micronekton and zooplankton). Allain et al. (2011) discuss a number of projects which contribute to EAFM. These include but are not limited to:

- Regional Observer Programme has the objective to collect verified catch data, other scientific data, and additional information related to the fishery from the Convention Area and to monitor the implementation of the CMMS adopted by the Commission. The Programme is based on the use of existing regional, sub-regional and national observer programs already in place amongst WCPFC members. Although there have been problems with data obtained under this program, including biases introduced through operational changes and historically low coverage, recent improvements in the Programme, including 100% coverage in the purse seine fishery from 2010 and a minimum of 5% coverage in the longline fishery from 2012 should improve the quantity and quality of data available.
- data on species' diet has been used to develop Pacific Ocean food-web models (Eastern Tropical Pacific, Central North Pacific, Pacific Warm Pool, and the Australian Eastern Tuna and Billfish Fisheries) developed with the Ecopath with Ecosim (EwE) modeling tool.
- the bycatch mitigation information system (BMIS) is the result of a WCPFC project to centralize and make information available on the mitigation and management of bycatch in WCPO. The database is a reference and educational tool that supports the Commission's responsibilities with regard to the sustainable management of non-target, or bycatch, species in WCPO fisheries targeting highly migratory species, including tuna and billfish (see https://www.bmis-bycatch.org/) (Fitzsimmons 2011; 2012; and Fitzsimmons et al. 2018).

The ecosystem model, SEAPODYM, was developed to investigate the spatial population dynamics of fish under the influence of both fishing and environmental effects. In addition to fisheries and other fish relevant data (e.g. tagging data, acoustic biomass estimates, eggs, and larvae density), the model utilizes environmental data in a manner that allows high-resolution prediction (Lehodey et al. 2008). SEAPODYM was initially developed for tuna species and complements the WCPFC Scientific Committee's MULTIFAN-CL models by providing additional information on how tuna distributions are structured in space and time.

Additional focus on ecosystem information has been provided through Kobe By-catch Technical Working Group (KBTWG) which was established in 2009 with the aim of supporting, streamlining, and seeking to harmonize the by-catch related activities of Ecosystems/By-catch working groups across RFMOs. The KBTWG's terms of reference include (Nicol et al. 2013):

- Identify, compare and review the data fields and collection protocols of logbook and observer by-catch data being employed by each Tuna RFMO. Provide guidance for improving data collection efforts (e.g., information to be collected) and, to the extent possible, the harmonization of data collection protocols among Tuna RFMOs;
- Identify species of concern that, based on their susceptibility to fisheries and their conservation status, require immediate action across Tuna RFMOs. Review all available information on these species and identify their data needs;
- Review and identify appropriate qualitative and quantitative species population status determination methods for bycatch species;
- Review data analyses to identify all fishery and non-fishery (e.g. oceanographic and physical) factors contributing to bycatch, taking into account the confidentiality rules of each RFMO;
- Review existing bycatch mitigation measures including those adopted by each Tuna RFMO and consider new mitigation research findings to assess the potential utility of such measures in areas covered by other Tuna RFMOs taking into consideration differences among such areas; and
- Review and compile information on by-catch research that has been already conducted or is currently underway to delineate future research priorities and areas for future collaboration.

3.5 Principle Three: Management System Background

3.5.1 Area of Operation and Relevant Jurisdictions

The Solomon Islands Longline fishery for yellowfin and albacore takes place to take place in the Western and Central Pacific Ocean, specifically in the EEZ of the Solomon Islands. The archipelagic waters form a subset of the EEZ with unique management in line with UNCLOS (see Figure 41); longline fishing is not permitted in Solomon Islands' archipelagic waters. Yellowfin and albacore tuna are highly migratory species under WCPFC management and the fishery only operates within the Solomon Islands EEZ and outside of archipelagic waters and the territorial sea.

Map of the UoA for the Solomon Islands fishery indicates the main boundaries within the EEZ (Figure 41). Archipelagic waters are shown inside the dotted purple lines, with yellow borders encompassing the Archipelagic waters and pale outline around the Main Group Archipelago indicate Territorial Seas. The dark blue is the area of operation for the Solomon Islands longline vessels considered within the UoA.

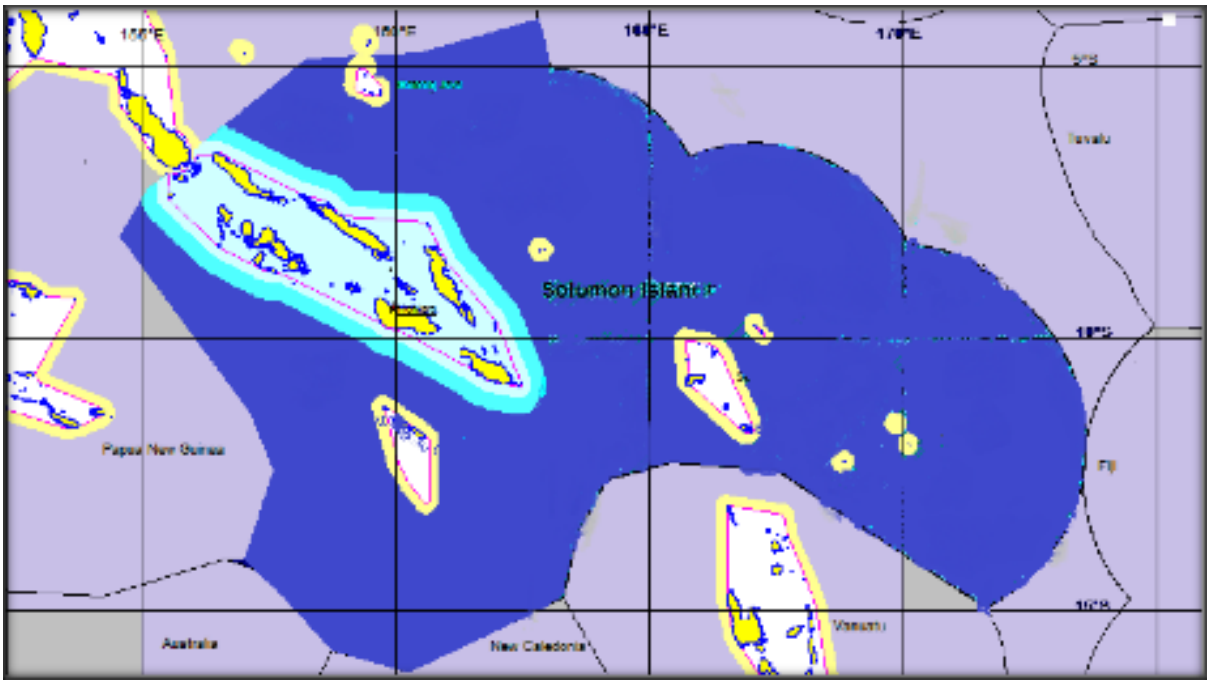

Figure 41. Attachment 2 Solomon Islands Tuna Management and Development Plan 2015.

Management of tuna fisheries across the WCPO involves a complex mix of national and international bodies and agreements. For the purpose of this section, the key components of the governance and fishery management framework at the regional level are:

- the Western Central Pacific Fisheries Commission (WCPFC), the Regional Fisheries Management Organisation (RFMO) for the Western and Central Pacific Ocean;
- the Parties to the Nauru Agreement (PNA) by virtue of the use of the Palau Arrangement for the Management of the Western Pacific Tuna Fishery - Management Scheme known as the PNA Longline Vessel Day Scheme (LL VDS); and
- at the national level:
- the Solomon Islands Government; and
- the flag States of China, Taiwan and Fiji (the flags of the vessels chartered to NFD).

All except Taiwan have ratified the United Nations Convention for the Law of the Sea (UNCLOS) and the Solomon Islands and Fiji have also ratified the United Nations Fish Stocks Agreement (UNFSA).

WCPFC sets Conservation and Management Measures (CMMs) and policies for the WCPFC Convention Area, excluding archipelagic waters (see below in this section). The PNA coordinates management for its members, including the Solomon Islands. The Solomon Islands Government is responsible for managing its waters and for ensuring management measures applied within the Solomon Island EEZ are compatible

with those of the WCPFC and consistent with the PNA LL VDS, with fishing by authorized vessels carried out in accordance with these measures. This includes the specific commitment from the Solomon Islands as a signatory to the Convention (Article 8, WCPFC, 2000), that:

"Conservation and management measures established for the high seas and those adopted for areas under national jurisdiction shall be compatible in order to ensure conservation and management of highly migratory fish stocks in their entirety"

The coastal State shall ensure that the measures adopted and applied by it to highly migratory fish stocks within areas under its national jurisdiction do not undermine the effectiveness of measures adopted by the Commission under this Convention in respect of the same stocks."

The flag States of China, Taiwan and Fiji have "due diligence" obligations with respect to their vessels fishing within the Solomon Islands EEZ. These general obligations were spelt out by the International Tribunal for the Law of the Sea (ITLOS) in its Advisory Opinion which was requested by the Sub-Regional Fisheries Commission (SRFC) in case no 21 of 2015. The SRFC sought advice on:

- What are the obligations of the flag State in cases where illegal, unreported and unregulated (IUU) fishing activities are conducted within the Exclusive Economic Zone of third-party States?
- To what extent shall the flag State be held liable for IUU fishing activities conducted by vessels sailing under its flag?
- Where a fishing license is issued to a vessel within the framework of an international agreement with the flag State or with an international agency, shall the State or international agency be held liable for the violation of the fisheries legislation of the coastal State by the vessel in question?
- What are the rights and obligations of the coastal State in ensuring the sustainable management of shared stocks and stocks of common interest, especially the small pelagic species and tuna?

In reality, given that all fishing takes place within the Solomon Islands EEZ, that there are strict domestic management arrangements implemented by the Solomon Islands Government and the structure of the fishing arrangements (foreign flagged vessels are chartered to the National Fisheries Development Pty Ltd, a locally based company with an MoU with the Solomon Islands Government), flag State involvement is minimal.

WCPFC's CMM 2018-01 for management of skipjack, yellowfin and bigeye is an interim measure pending the establishment of harvest strategies. The purpose of the measure is to provide a robust transitional management regime that ensures the sustainability of bigeye, yellowfin and skipjack tuna stocks.

The measure requires that conservation and management measures established for the high seas and those adopted for areas under national jurisdiction shall be compatible in order to ensure conservation and management of bigeye, skipjack, and yellowfin tuna stocks in their entirety. Measures shall ensure, at a minimum, that stocks are maintained at levels capable of producing maximum sustainable yield. For yellowfin tuna this requires that pending agreement on a target reference point the spawning biomass depletion ratio (SB/SBF=0) is to be maintained at or above the average SB/SBF=0 for 2012-2015.

There are no other specific requirements in the measure relating to longline fishing for yellowfin.

At WCPFC 15 (2018) the Commission agreed on an interim target reference point (TRP) for south Pacific albacore at 56 percent of spawning stock biomass in the absence of fishing (0.56 SBF=0)[7] with the objective of achieving an 8 percent increase in catch per unit of effort (CPUE) for the southern longline fishery as compared to 2013 levels.[8] If a future stock assessment indicates that this interim TRP will not result in the desired longline CPUE, then the interim TRP will be revised in order to meet this objective. The TRP shall be reviewed every 3 years, consistent with the south Pacific albacore assessment schedule. The Commission agreed all fisheries will be included and management measures must take account of the impact of different gear types. The setting of an interim TRP will have an impact on the management of the stock within Solomon Island waters.

The Forum Fisheries Agency (FFA) and the Secretariat of the Pacific Community (SPC) also play important roles in the management framework for this fishery because of the support and services they provide to Solomon Islands and other Pacific Island countries (PICs). FFA provides management, surveillance and other advice, while SPC is the WCPFC's science provider and also provides advice directly to the Solomon Islands Government.

Regional Frameworks and Institutions

The Western and Central Pacific Fisheries Commission (WCPFC)

- The Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (The Convention) established the WCPFC in 2004 to conserve and manage migratory fishery resources in the WCPO. More than half of the world's tuna catch is taken within the WCPFC Convention Area. The WCPFC is the overarching regional management framework relevant to this assessment.

The WCPFC Secretariat is based in Pohnpei, Federated States of Micronesia and the Commission has three subsidiary bodies the 'Scientific Committee' (SC) the 'Technical and Compliance Committee' (TCC) and the "Northern Committee" (NC). The WCPFC comprises member nations, participating territories and the fishing entity of Chinese Taipei (also referred to as Chinese Taipei). The 'Northern Committee' was established to deal with management and conservation issues to the north of 20° N.

In addition to these bodies specified in the Convention, the Commission may establish other subsidiary bodies (e.g., the Finance and Administration Committee) and also employs ad hoc working groups as required. Ad hoc working groups have been established for data-related issues, the Commission's vessel monitoring system, the regional observer program, and other issues including electronic reporting and electronic monitoring.

Scientists of the SPC's Oceanic Fisheries Programme (SPC- OFP) are responsible for leading much of the scientific research utilized by the Committees. WCPFC has a Memorandum of Understanding (MoU) with the SPC to provide scientific services, including data management services. Under the MoU, the SPC's

[7] The method to be used in estimating the recent average spawning biomass in the absence of fishing shall be the same as that adopted by the Commission for the limit reference point, as described in paragraph 3 of CMM 2015-06

[8] The proxy for CPUE will be the southern longline vulnerable biomass as estimated within the stock assessment.

Oceanic Fisheries Programme collects, compiles, and disseminates fisheries data; undertakes regional stock assessments of key target and non-target species; conducts ecosystem analyses and advises on the WCPFC's observer program and other strategies to monitor and control fishing activities.

The Convention incorporates provisions of the United Nations Fish Stocks Agreement (UNFSA), in particular:

- The objective of ensuring, the long-term conservation and sustainable use of highly migratory fish stocks (Article 2)[9];
- The general principles in Article 5 of UNFSA including the application of the precautionary approach, incorporating the UNFSA Annex II Guidelines for The Application of Precautionary Reference Points (Article 5);
- The application of these principles by parties in their cooperation under the Convention, including the application of these principles in areas under national jurisdiction, (Article 7);
- Compatibility of measures established for the high seas and those adopted for areas under national jurisdiction (Article 8);
- Application of the dispute settlement provisions of the UN Fish Stocks Agreement to disputes between WCPFC Members (Article 31); and
- Recognition of the interests of small scale and artisanal fishers, and of communities and small island states dependent for their food and livelihoods on tuna resources (Article 30).

The Convention provides a framework for the participation of Members, Participating Territories and Cooperating Non-members in the Commission which legally binds all parties to the provisions of the Convention. The Convention specifically provides recognition of the special requirements of developing States, particularly small island developing states (SIDS) and cooperation with other RFMOs whose respective areas of competence overlap with the WCPFC.

The Commission has 26 Members, most of which are SIDS. The current members are: Australia, Canada, People's Republic of China, Cook Islands, European Union (EU), Federated States of Micronesia (FSM), Fiji, France, Indonesia, Japan, Kiribati, Korea, Republic of the Marshall Islands (RMI), Nauru, New Zealand, Niue, Palau, Papua New Guinea (PNG), Philippines, Samoa, Solomon Islands, Chinese Taipei, Tonga, Tuvalu, United States of America (USA) and Vanuatu. Participating Territories include American Samoa, Commonwealth of the Northern Mariana Islands, French Polynesia, Guam, New Caledonia, Tokelau and

[9] The Articles referred to here are the Articles of The Convention.

Wallis, and Futuna. In addition, the following States are currently Cooperating Non-members: Ecuador, El Salvador, Liberia, Nicaragua, Panama, Thailand, and Vietnam[10].

A list of the Conservation and Management Measures (CMMs) relevant to the longline fishery can be sourced on the WCPFC website (www.wcpfc.int/conservation-and-management-measures). Roles and responsibilities of WCPFC members are 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.

Article 30 recognizes special requirements for developing states in regards to high dependence on marine resources and the need to avoid adverse impacts on subsistence fishers and indigenous people. To this end, the Article established a fund to facilitate effective participation through provision of financial and technical resources and assistance to developing States.

The WCPFC allows participation by non-members and territories, with particular opportunities for cooperating non-Members. Observers are allowed to participate in meetings of the Commission and its subsidiary bodies, including the Scientific Committee, the Northern Committee, the TCC, and the Finance and Administration Committee although some parts of these meetings are closed or limited to Observers. As part of the conditions for Cooperating Non-Member status, applicants are required to provide annually a "a commitment to cooperate fully in the implementation of conservation and management measures adopted by the Commission and to ensure that fishing vessels flying its flag and fishing in the Convention Area and, to the greatest extent possible, its nationals, comply with the provisions of the Convention and Conservation and Management Measures adopted by the Commission." (CMM 2009-11)

The Parties to the Nauru Agreement (PNA)

The Nauru Agreement is a regional agreement made to facilitate cooperation in the management of fisheries resources of common interest. The EEZs of the Pacific island states party to this Agreement collectively account for a significant amount of the region's tuna catch and the majority of the purse seine catch. The Nauru Agreement is a binding Treaty-level instrument considered to be a sub-regional or regional fisheries management arrangement from the perspective of the UNFSA and the WCPF Convention. 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. Tokelau is not a member but in 2012 signed an agreement with the PNA countries to join the purse seine VDS.

[10] Cooperating non-member roles and requirements are detailed in CMM 2009-11. A non-member of the Commission, with an interest in the fishery, or whose vessels fish or intend to fish in the Convention Area, may request the Commission for the status of Cooperating non-member (CNM).

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 to promote economic control and participatory rights over the tuna resources in PNA waters, with a primary focus to:

- Develop strategic fisheries conservation and management initiatives;
- Develop initiatives to maximize the sustained direct and indirect economic benefits to the Parties; and
- Maximize the profitability of the fishery and ancillary industries within the PNA.

The PNA's functions include operating access and management regimes, which optimize revenue collection for the parties, as well as promoting the development of the Parties' indigenous fishery sector.

The Pacific Islands Forum Fisheries Agency (FFA)

The Pacific Islands Forum Fisheries agencies 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. The FFA presently has seventeen members - Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu, each of which is represented on the FFC.

FFA is an expertise-based organization 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 organizations such as the PNA and WCPFC.

The FFA Secretariat focuses its work on:

1. Fisheries management – providing policy and legal frameworks for the sustainable management of tuna;
2. Fisheries development – developing the capacity of members to sustainably harvest, process and market tuna to create livelihoods; and
3. Fisheries operations – supporting monitoring, control, and surveillance of fisheries as well as treaty administration, information technology, and vessel registration and monitoring.

The Forum Fisheries Committee is comprised of one representative of each of the 17 members. The representative may be assisted by deputies. Observers may also participate and this allows review and engagement by other relevant organizations. The FFC meets once a year at its annual session, normally held in the first week of May and again in special meetings held at other times of the year, according to its discretion and agenda. Meetings are closed to the public and an attempt is made to reach decisions

by consensus among member countries, although there is also the ability to take issues to a vote (each party has one vote and a two-thirds majority is required of all parties present for the vote to pass).

The FFC reviews the FFA's performance, consider regional policies, the budget and the future work program of FFA. The development and operation of FFA's Annual Work Plan and Budget is driven by the Statement of Intent, which is a rolling three-year bridging arrangement to ensure achievement of the longer-term Strategic Plan.

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

- 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;
- Servicing regional fisheries treaties and arrangements; and improving capacity in fisheries management.

Two key instruments in the implementation of these programs are the Regional Tuna Management and Development Strategy and the Regional Monitoring Control and Surveillance Strategy.

In addition to providing services to FFA Members, the FFA Secretariat 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. For more on FFA's role in MCS, see Section: Compliance and Enforcement.

FFA Licensing arrangements

In 1982, FFA established standardization of minimum terms and conditions of fisheries access throughout the Pacific region. Members agreed to adopt these minimum standards and conditions in licensing distant-water fishing nations' fleets. They included the regional register of fishing vessels and conditions

such as licensing procedures, rights of authorized law enforcement officers, requirements for reporting catch and maintaining logbooks, reporting requirements and procedures for entering and exiting zones and for identifying vessels.

These conditions are updated from time to time by the FFA by agreement of all member countries and territories. The Harmonized Minimum Terms and Conditions (HMTCs) as they are known, are given national effect through vessel licensing conditions or by incorporation into national law as appropriate. The current HMTCs are as amended by FFC106 (10 May 2018) (available at https://www.ffa.int/system/files/FINAL%20MTCs%20as%20revised%20by%20FFC106_10May2018-1_001.pdf). The HMTCs constitute a key strategic tool for FFA members to regulate access to their waters and set standards to protect, as well as maximize the benefits from, their fisheries resources. The current HTMCs include:

- 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), transship only to a licensed carrier vessel which is in "good standing" on the FFA Vessel Register; provide 72 hours notice to transship in port; submit full reports on transshipping; allow inspection of the transshipment
- Maintain and submit catch logs in zones and on the 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 in such a manner that it is not readily available to use 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 in accordance Annex 4 of the Conditions;
- Fish Aggregating Devices to be clearly marked and identified;
- Compulsory pre-fishing inspections to be carried out.

The Secretariat of the Pacific Community (SPC)

The SPC Oceanic Fisheries Programme (SPC-OFP), based in Noumea, New Caledonia, 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 American Samoa, Australia, Cook Islands, Federated States of Micronesia, Fiji Islands, France, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, New Zealand, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Pitcairn Islands, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, United States of America, Vanuatu and Wallis and Futuna. SPC is the science service provider for the WCPFC and as such provides services including provision of data and scientific stock assessment support services for all major tuna species.

The PNA Longline Vessel Day Scheme (VDS)

The PNA developed a longline VDS (LL VDS) in 2011, but needed the approval of five of the eight members to bring the arrangements into effect for those signing. In November 2014, the Marshall Islands signed the agreement which brought to five the number of PNA nations that have formally endorsed the LL VDS for implementation. This brought the scheme into effect. Other PNA nations that have now signed the VDS for longliners are Nauru, Solomon Islands, Palau, Kiribati, Marshall Islands, PNG, Tuvalu and the Federated States of Micronesia. Tokelau is also part of the scheme.

The objectives of the LL VDS are to enhance the management of longline fishing vessel effort in the waters of the Parties in order to:

1. promote optimal utilization, conservation and management of tuna resources;
2. maximize economic returns, employment generation and export earnings from sustainable harvesting of tuna resources;
3. support the development of domestic locally based longline fishing industries;
4. secure an equitable share of fishing opportunities and equitable participation in the tropical longline fisheries for the Parties;
5. increase control of the tropical longline fishery for the Parties;
6. enhance data collection and monitoring of the fishery;
7. promote effective and efficient administration, management and compliance; and
8. encourage collaboration between the Parties.

Key features of the LL VDS are:

- Parties set the Total Allowable Effort (TAE) in fishing days for each Management Year (calendar years) having regard to the best available scientific, economic, management and other relevant advice and information;

- The TAE is allocated amongst the Parties as their Party Allowable Effort (PAE) in the manner agreed to by Parties.
- A fishing day is defined as any day or part of a day where fishing activity occurs in the waters of a Party outside archipelagic waters;
- Fishing operations/days are tracked using the PNA Fishing Information Management System (FIMS)
- Parties may transfer days freely between themselves within a single management year; days cannot be transferred and/or borrowed between management years;
- Each Party is required to take all necessary measures to ensure that the number of fishing days by vessels in its EEZ does not exceed that Party's PAE or adjusted PAE in any management year;
- A fishing day for a small vessel (less than or equal to 40 m length overall (LOA)) is counted as 0.8 of a fishing day, and large vessels (greater than 40 m LOA) is 1.3 fishing days;
- All vessels must be registered on the PNA LL VDS Register and each Party shall ensure that every LL vessel licence includes a condition to this effect.
- Arrangements for payback if a Party exceeds its PAE - if the PAE is exceeded for a Management Year, the Party's PAE for the following Management Year will be adjusted by deducting:
- If the excess is less than 10% of the PAE – the amount of the excess;
- If the excess is 10% of the PAE or more – 120% of the excess.
- The LL VDS is overseen and reviewed by a Longline Vessel Day Scheme Committee (LLVDSC), and reports to the annual meeting of the Parties to the Palau Arrangement. The role of the Longline Vessel Day Scheme 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: the committee may also be mandated to decide on certain operational aspects of the VDS.

The PNA views the LL VDS as an integral part of the package of reforms that should see the transfer of longline fishing rights to coastal states. PNA members have sought zone-based limits, like the purse seine VDS, and opposed flag-based limits, they consider zone-based limits strengthen PNA sovereign rights and leave control with PNA members.

2016 was the first-year application of the 5-year TAE of 165,132 as adopted by Parties and the final year of the LL VDS trial period. This TAE was higher than the 2015 TAE (146,592), which was also an increase from the original TAE of 130,000 days.

Some of the practical issues arising from the implementation of the LL VDS include:

- Difficulties ensuring that all vessels fishing under the scheme are registered with the PNA (PNA VDS Register) - so not all fishing days or effort maybe being recorded;

- Collective effort being well below the TAE and PAEs (2018 approximately 33% across all Parties, but varied from less than 1% to 67%) - so that the incentive to purchase days is reduced and the full potential benefits to PNA members are not realized;
- Potential data gaps (vessels not reporting properly to FIMS) - so that not all fishing effort may be recorded;
- Effort relocating from within EEZs to the high seas – so full potential benefits to PNA members are not realized and fishing activities take place where management is not monitored as closely;
- Not all fishing within Parties' EEZs being covered by the Scheme - so that the incentive to purchase days is reduced and the full potential benefits to participating PNA members are not realized.

3.5.2 National Level Management

Solomon Islands Government

As a Party to the UNFSA, WCPF Convention and the Nauru Agreement, Solomon Islands has accepted the obligation to comply with the provisions of these Agreements. In particular the obligation to apply the principles in those agreements, including the precautionary approach and the need for compatible management arrangements, in their EEZ. The approaches to implementation of these instruments in national laws are broadly similar, reflecting the long period of the collaboration of the Solomon Islands in tuna management through PNA, FFA and more recently, the WCPFC. The Fisheries Management Act (2015) builds on previous legislation to provide contemporary legislation implementing all required obligations.

Importantly, the protection of customary rights is explicit within the Fisheries Management Act 2015, and each fishing vessel license contains the following statement "The vessel shall not be operated in such a way as to breach the customary rights of any customary fishing rights holders, nor to disrupt or adversely affect the traditional fishing of any local fishermen".

Due to the nature of this fishery and the fact it only takes place within the Solomon Islands EEZ, the primary focus of management and control is the Solomon Islands fisheries legislation, associated regulations, tuna management plan and the license conditions on the vessels.

The overarching legislation governing these operations is the Solomon Islands Fisheries Management Act 2015. This is supported by the Fisheries Management Regulations 2017, the Tuna Management Development Plan 2015 and annual license conditions.

The Fisheries Management Act 2015 is comprehensive and was updated following the European Commission warning (yellow carding) the Solomon Islands received in December 2014. The warning was issued because not enough was being done to control Illegal, Unreported and Unregulated (IUU) fishing11.

[11] The main objective of the EU Regulation to end IUU fishing is to prevent, deter and eliminate trade of fisheries products originating from IUU fishing activity and stop their access to the EU markets. Under the Regulations, non-EU countries are 'carded' by the EU when they fail to fight IUU fishing. A yellow card acts as a warning for the

Since then, the Solomon Islands has embarked on a series of reforms to bring its fisheries legal and administrative frameworks fully into line with international law and is now well equipped to tackle these threats effectively. Working closely with the European Commission, they have strengthened their sanctioning system, and have improved monitoring and control of their fleets. The "yellow card" was lifted in February 2017.

Fisheries Management Act, 2015

The Act has the following broad Parts covering:

- Objectives and Principles
- Administrative arrangements
- Fisheries Conservation and Management
- Fisheries Access and Management Arrangements
- Licensing
- Requirements for fishing and other activities
- Monitoring, Control, and Surveillance
- Disposal, Release, and Forfeiture of seized items
- Jurisdiction, Procedure, Fines, and Liabilities
- Summary of Administrative Proceedings
- Evidence
- Miscellaneous

The Act has two Schedules, the first covers Fines and specifies for each appropriate section and sub-section in the Act the maximum fine in Penalty Units[12]. The Second Schedule specifies the requirements when developing Fisheries Management Plans under section 17 and 18.

Fisheries Management Regulations 2017

The Fisheries Management Regulations 2017 provide necessary additional arrangements for the operation of the Act and has Parts dealing with:

- Governance and Administration;
- Offenses;
- Marking of Vessels and Conditions Relating to Fishing Equipment;
- Fish Storage, Processing and Export Facilities;

country that they need to improve their management and enforcement and compliance, whereas red-carding means that products are prohibited from entering the EU market.

[12] Penalty Units allow for fines to be increased by regulation or other instrument over time without the need to amend the governing legislation.

- Fisheries Management Measures;
- National Registers;
- Records, Returns, Data and Information;
- Reporting;
- Licensing and Authorisations;
- Port State Standards;
- Transshipment and Bunkering;
- Monitoring, Control, and Surveillance;
- Observer and Port Sampling Costs

Tuna Management and Development Plan 2015

Part 4 Sections 17-19 of the Act deal with the development and approval of Fisheries Management Plans. These Plans are overarching policy documents which provide detailed background and information on the Objectives, Verifiable Indicators, the Means of Verification and Assumptions. A National Tuna Management and Development Plan (TMDP) 2015 is currently in place. The Plan was developed and came into effect in January 2014 following endorsement by the Fisheries Advisory Council (FAC) and approval by the Minister. The Plan was amended in 2015 to incorporate revised objectives and ensure consistency with the new Fisheries Management Act 2015. Whilst this latter Plan was approved by the Minister and endorsed by the Cabinet, it was not gazetted under Section 17 (6) of the Act. A new Plan is currently being drafted and is intended to be put to the Minister for approval later in 2019.

The TMDP is designed to guide future management and development of tuna fisheries to achieve the overall goal of the Government of the Solomon Islands.

The overall objective of the Plan is:

- "Tuna fisheries are managed to ensure Solomon Islands receives maximum economic and social benefits from the sustainable use of its tuna resources"
- The Strategies to support this objective are:
- Ensure fish stocks are maintained at sustainable levels that support profitable fisheries.
- Manage fisheries within recognised principles of ecosystem approach to management
- Maximise employment opportunities for Solomon Islanders
- Increase investment in fisheries and Government income from the tuna fishery sector
- Enhance food security and livelihoods, and minimise adverse social, cultural, and gender impacts.
- Ensure good governance, management and compliance systems are in place
- Enhance Solomon Islands influence at regional and international management organisations.

The TMDP applies to all Solomon Islands-registered tuna fishing vessels when operating in Solomon Islands fisheries waters or on the high seas and all foreign vessels when operating in Solomon Islands fisheries waters. The TMDP applies to fish companies whether foreign owned, foreign-owned locally-based, or local and those wishing to establish or set up tuna fishing in the Solomon Islands. It also applies to all Solomon Islands nationals when fishing for tuna on these vessels or any other vessels fishing in the Solomon Islands EEZ. The Fisheries Management Act (2015), allows for control of Solomon Islands-registered vessels operating outside the Solomon Islands EEZ so these are also covered by the TMDP. The Plan covers all fishing by purse seine vessels, longline vessels, and pole and line vessels.

Solomon Islands longline Vessel Days Scheme for the EEZ

From 2016, Solomon Islands has implemented the longline vessel days scheme (LL VDS) which acts as an overall ceiling on fishing effort. In 2018 the Solomon Islands LL VDS share of the PNA TAE was 29,432 fishing days (17.7%) of a TAE of 165,132 fishing days. During discussions with MFMR, we were advised that an effective limit of approximately 24,000 days would be used. The actual number of days used in 2018 was 19,974 or some 67.5% of the total Solomon Islands allocation. MFMR advised that their overall goal was to manage approximately 90-100 vessels and that this was a significant drop from a peak of some 300 vessels.

The decision to significantly reduce the number of vessels was based on work done by the SPC which found that around 18,000 fishing days would approximate MEY (Maximum Economic Yield – that is the level of fishing effort that produces maximum profit for the fishery), while BE (Breakeven - the maximum level of fishing effort at which the fishery still remains [minimally] profitable) would be significantly higher at approximately 36,000 fishing days. This suggests that current management settings are reasonably conservative, which supports both the sustainability and profitability objectives.

There are some 100 vessels owned by four companies fishing under the LL VDS. They are all subject to the same arrangements and costs. In 2019, a fishing day costs $100 and with associated costs, based on the purchase of 200 fishing days, the total cost to operate a vessel in the fishery is about $35,000, which is similar to the previous access fee charged prior to 2016. Unlike the PS VDS, there is no distinction established as yet between active fishing days and transit days; currently, they are all charged as fishing days.

Up until 2017, the Solomon Islands was party to both the Tokelau Arrangement for the Management of the South Pacific Albacore (TA) and the PNA LL VDs.

The TA was agreed in October 2014 with the following objectives. To promote optimal utilisation, conservation and management of albacore stocks within the scope of this Arrangement through the development of management approaches for:

- maximizing economic returns, employment generation and export earnings from sustainable harvesting of these resources;
- supporting the development of domestic and locally based fishing industries;
- securing an equitable share of fishing opportunities and equitable participation in fisheries for these resources for the Participants;

- increasing control of the fishery for the Participants;
- enhancing data collection and monitoring of the fishery;
- promoting effective and efficient administration, management and compliance; and encouraging collaboration between the Participants.

The TA is designed to manage the catch of albacore tuna using zone limits, with each of the participants receiving a catch limit (in tonnes) for their zone. The Solomon Islands catch limit was 14,500 tonnes. The TA came into effect on 15 December 2014.

In October 2017, the Solomon Islands withdrew from the TA, given the complexity of attempting to manage a multispecies fishery using both an output-based catch limit under the TA catch management scheme for albacore, together with an input-based fishing effort limit for yellowfin and bigeye under the LL VDS. It uses the PNA FIMS system to manage the day to day operations of the longline fishery.

Under the TMDP any transfer of fishing days is carried out in accordance with the PNA VDS requirements, which only allows this between Parties. There is no direct transfer or trading of fishing days between companies or vessels. Should companies wish to transfer days, the days would be first returned to MFMR, who would then make the transfer under normal transfer processes (Honiwala *pers comm*). Where there is an agreement to transfer fishing days between Parties this is to be notified to the PNAO Office.

A transfer of another party's PAE to the Solomon Islands, or any Solomon Islands PAE to another party, can only occur within the VDS rules applicable at the time the transfer occurs and can only be approved by MFMR on agreed terms. Section 42 of the Fisheries Management Act 2015 provides:

(1) The Minister may, by Regulation, establish a tendering and trading processes for the allocation of vessel days to licensed foreign fishing vessels, consistent with a scheme or other measures taken under a relevant international agreement.

(2) The trading of vessel days shall be subject to approval by the Director and payment of such fee as may be prescribed or the Director shall require by Order.

Any receipt of days by the Solomon Islands is regarded as an increase in the Solomon Islands PAE, and any transfer of days from the Solomon Islands is treated as a reduction in the Solomon Islands PAE.

Under the TMDP the following conditions apply to transfer days within the Solomon Islands PAE:

- Transferring days between groups/companies must occur through MFMR;
- Is subject to an administration fee set by MFMR.
- Any transfer shall be completed by MFMR within 7 working days on receipt of the administrative fee, and a completed application form signed and containing all the relevant information.
- A transfer of days can only be approved by MFMR and on agreed terms.
- Days subject to a fishing day claim cannot be transferred.
- Neither fishing days or non-fishing days can be carried forward into or borrowed from future years.

- Operations of the longline vessels operating within the Solomon Islands EEZ are subject to detailed license conditions and comprehensive Monitoring, Control, and Surveillance (MCS) arrangements.
- License Conditions

Advice received during the on-site visit indicates that all vessels in the fishery are subject to the same management arrangements, including license conditions. Vessels regardless of flag, are subject to Solomon Islands law and any breach of that law will be pursued either administratively or via prosecution in the Solomon Islands.

In 2018 there were 37 separate license conditions covering inter alia:

- Governing legislation;
- Binding the Master and crew to management arrangements, all license conditions, the Access Agreement, and all applicable international conservation and management measures;
- Boarding and inspection arrangements;
- Limiting the area of operations to EEZ only (no fishing in Territorial Sea or Archipelagic waters);
- Avoiding and/or minimizing bycatch, including banning wire tracers. If sharks are taken and retained they have to be landed with fins naturally attached;
- Only transhipping to carrier vessels licensed by the Solomon Islands and only in designated ports;
- Report daily, including all catch and bycatch both manually and electronically using the FFA/SPC Regional Logsheet to MFMR;
- Report via VMS every four hours;
- Being registered on the PNA VDS Register and be in good standing on the FFA Regional Register (otherwise the license is invalid);
- Carrying a fisheries observer – when directed and meet all associated costs;

MoU between the Government of the Solomon Islands and National Fisheries Development Limited

In addition to the generic license conditions for vessels operating in the fishery, NFD has an MoU with the Solomon Islands Government for longline charters. The MoU covers the operations of the company and vessels and provides details of the scope, responsibilities of the company, fees payable, licensing procedures, landings and transshipment, placement of observers, compliance, fishing operations, consultation, and dispute resolution. Importantly, the license conditions are considered to be part of the MoU between NFD and the Solomon Islands Government.

Monitoring, Control, and Surveillance (MCS)

The MCS arrangements for this fishery cascade from more general regional arrangements (at the WCPFC level), to the subregional level (FFA and PNA) and specific requirements at the national Solomon Islands level. The key regional requirements in relation to this fishery are being on the WCPFC Record of Fishing Vessels and meeting VMS reporting requirements although there are also general requirements in relation

to IUU vessel listing, port state controls, observers, logbooks and transshipment monitoring (not all these apply to operations solely within a coastal State EEZ). The Solomon Islands as a Member of the WCPFC is required to implement all regional arrangements.

At the sub-regional level, the FFA has developed arrangements that all members are required to implement. These are covered by the Harmonized Minimum Terms and Conditions (provided in more detail above), some of which cover the regional level arrangements. The PNA LL VDS also has requirements that Parties are required to implement, these include being on the PNA VDS Register and reporting via FIMS.

Before considering the licensing of a vessel to fish within the Solomon Islands EEZ, it must be in good standing on the FFA Register, have registered with the PNAO on the LL VDS register and for FIMS and have completed a vessel safety inspection. Subject to meeting these requirements and payment of any necessary fees a license will be issued. Once the license has been issued, fishing days can then be purchased. All vessels are subject a pre-fishing inspection before fishing can commence. Vessels may also be asked to participate in the electronic monitoring (EM) trial and be required to carry an observer if requested to so.

All vessels are required to have their catch inspected and recorded in the Solomon Islands and all landings and inspections are monitored by MFMR Fisheries Officers. For NFD vessels, the product is inspected/landed in Noro. Vessel masters/owners can choose not to land product in the Solomon Islands or to sell to other domestic companies. Where a product is not landed in the Solomon Islands, it is not considered as part of the UoA/UoC.

During landings/port inspection the Fisheries Officers check where the vessel has been fishing (via VMS and logbook), the vessel license conditions and the unloading. 48 hours' notice is required prior to port entry. If an observer is on the vessel they provide their trip report on port arrival. Where a product is landed, NFD weighs and records each fish, this information is provided to MFMR.

Compliance and Enforcement

The foundation of fisheries compliance and enforcement are the provisions of the Fisheries Management Act 2015. These arrangements benefit from well established regional arrangements, including the services provided by the FFA. These include vessel and company risk assessment and surveillance services, VMS monitoring (in addition to those directly available to the Solomon Islands) and annual coordinated operations with support from other States.

There are detailed compliance and enforcement provisions under the Act and Regulations:

Division 3 of the Act deals with Prohibited Activities and covers the following:

- Fishing and related activities may be subject to the prohibition
- Fishing with prohibited substances
- Driftnet fishing activities prohibited
- Tampering with or destruction of property in the fisheries waters prohibited
- Use, possession on the vessel, import, purchase or sale of prohibited gear

- Prohibition of possession and trade in fish, fish products or other fisheries resources
- Prohibition of sale or export of adulterated or contaminated fish or fish products
- Prohibition of interference with inspected fish and fish products
- Prohibition to deploy, maintain fish aggregating device without permission or in contravention of requirements
- Declaration of and prohibitions respecting protected or endangered species
- Pollution of the fisheries waters
- Division 4 with Records, registers and information
- Part 5 of the Act with Fisheries Access and Management Arrangements
- Foreign fishing vessels
- Fisheries access by foreign fishing vessels
- Fisheries access – terms and conditions
- Fisheries access - review
- Fisheries Management Agreements
- Allocation and trading of Vessel Days

These provisions are supported in many cases by more detailed Regulations which provide greater detail on requirements and penalties for non-compliance. See for example the Fisheries Management Regulation 2017 and the Fisheries Management (Prohibited Activities) Regulations 2018.

In support of the compliance and enforcement activities undertaken by MFMR, they provided the following information on recent fines/prosecutions (Figure 13).

The infringement cases in the Table were all handled via administrative proceedings. The Summary Administrative Proceedings provisions are contained in Section 116 and 117 of the Fisheries Management Act 2015. The Administrative processes involve the Ministry of Fisheries and Marine Resources, the Office of the Director of Public Prosecution and the Attorney General's Office. This process can only proceed where the Company or Vessel admit to the offense or infringement and agreed to have the matter dealt with via these provisions.

Table 14. Summary table of fishery infringements within the Solomon Islands EEZ from 2014 – 2018, provided by MFMR.

Date	Gear Type	Nature of offense	MFMR action	Penalty
March 2016	LL	Breach of Licence Conditions	Vessel detained and released upon payment of fine	SBD $2.5m
23 January 2017	LL	Breaching section 49 (2) (a) and (b) of SI FMA 2015	Vessel detained and released after payment of fine	SBD $ 1.0m
6 February 2017	PS	Breach 2016 License conditions 8 for Purse Seine vessels operating in SI waters which contravene section 49(2) (a) (b) of the FMA 2015	Vessel detained and released after fine payment	SBD $ 1.0m
14 August 2018	LL	Non- compliance with license conditions	Vessel detained for investigation	SBD $ 100,000

Roles and Responsibilities

At all levels, roles and responsibilities are well established.

Roles and responsibilities of WCPFC members are clearly described in the Convention[13]. The Solomon Islands, Fiji, China and Chinese Taipei (Taiwan) are all Members. 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 all set out key roles and responsibilities.

Article 30 recognizes special requirements for developing states in regards to high dependence on marine resources and the need to avoid adverse impacts on subsistence fishers and indigenous people. To this end, the Article established a fund to facilitate effective participation through provision of financial and technical resources and assistance to developing States.

The WCPFC allows participation by non-members and territories, with particular opportunities for cooperating non-Members. Observers are allowed to participate in meetings of the Commission and its subsidiary bodies, including the Scientific Committee, the Northern Committee, the TCC and the Finance and Administration Committee although some parts of these meetings are closed to Observers.

[13] Available online: https://www.wcpfc.int/system/files/text.pdf

The PNA has formal meetings both at the Ministerial level and of officials. The LL VDS also has the Longline Vessel Day Scheme Committee (of officials) which meets to discuss technical issues.

At the National level the Fisheries Management Act 2015 and the Tuna Management and Development Plan 2015, provide a detailed picture of respective roles and responsibilities. Part 3 of the Act "Administration" sets out details of the functions, powers, and duties of the Minister, the Permanent Secretary and the Director of Fisheries. It establishes the Fisheries Licensing Committee, the Fisheries Appeals Committee, and the Fisheries Advisory Council.

The Fisheries Licensing Committee makes recommendations to the Director on the grant, renewal, suspension, and revocation of licenses and authorizations to be issued pursuant to this Act.

The Fisheries Appeals Committee hears appeals from decisions on licensing made in accordance with section 52; and any substantive decision of the Director taken in the performance or exercise of their functions, powers, and duties under this Act,

The Fisheries Advisory Council is established to advise the Minister and make recommendations at the request of the Permanent Secretary on matters relating to fisheries conservation, management, development, and sustainable use. The Council is also responsible for reviewing all elements of the Tuna Management and Development Plan. For a number of reasons, the Council has not met since 2015.

Decision-Making Processes

The Fisheries Management Act 2015 and the Tuna Management and Development Plan set out the legislation and policy framework for decision making in relation to this fishery. While the fishery is governed broadly by the requirements of WCPFC CMMs and the operation of the PNA LL VDS, it is at the National level that this operationalized. The Fisheries Advisory Council and the Tuna Industry Association Solomon Islands (TIASI) are key stakeholders. TIASI is the industry body which meets two or three times a year with MFMR. The Fisheries Advisory Council (FAC) is established by the Act with Members appointed by the Minister.

The FAC membership and operations are prescribed in the Fisheries Management Regulations 2017. The Membership is as follows:

"16. (1) The Fisheries Advisory Council must not have more than 11 members.

(2) Membership of the Fisheries Advisory Council must include the following:

- *a. one representative of each of the coastal and offshore fishing industry;*
- *b. a representative of Marine Managed Areas established under the Act to represent the fishing communities;*
- *c. a representative of the Provincial Governments;*
- *d. a person representing non-government organisations with an interest in fisheries;*
- *e. a representative from the Pacific Islands Forum Fisheries Agency nominated by the Director-General of the Agency; and*
- *f. a representative of each of the following in an ex officio capacity:*
  - *(i) the Attorney-General's Chambers;*

(ii) the ministry responsible for Environment;
(iii) the ministry responsible for Finance;
(iv) the ministry responsible for Mines, Minerals and Energy; and
(v) the Ministry responsible for Police and Maritime Enforcement."

Members of the Fisheries Advisory Council must be appointed with a view to achieving a balanced representation between genders and across fisheries sub- sectors. The Members are encouraged to voluntarily engage in consultation processes that regularly seek relevant information with a view to carrying out their functions. As mentioned above the Council has not since 2015, however MFMR have advised that new appointments are being made to the Council and it will meet as soon as these are complete (Honiwala *pers comm*).

At the regional level, the WCPFC has a consensus-based decision-making process, with provision 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. The subsidiary bodies of the Commission provide extensive, detailed reports to the Commission, including advice and recommendations. Decision-making is open, with the process, outcomes and basis for decisions recorded in detail in records of Commission sessions and publicly available papers.

MFMR is a party to all decisions at WCPFC level including participation in the Scientific Committee, Technical Compliance Committee and WCPFC general sessions where final decisions are taken at regional level. These decisions adhere to the basic principles that serious and other important issues are identified in relevant research, monitoring, evaluation and consultation; that Information on fishery 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. Agreed measures are linked to international obligations and are binding on the members to implement. As such, there is limited scope for legal challenge. MFMR is also party to PNA decision making, however, detailed information on the basis for decisions in relation to the LL VDS, the PAE and how this equates to sustainable harvest levels is not publicly available.

The Fisheries Management Act lays out the Minister's decision-making authority. The decision-making process for the Solomon Islands involves recommendations from MFMR and/or SPC, presentations to the FAC for evaluations and recommendation, leading to a decision by the Minister whether to implement. In the event that recommendations are rejected, in the past explanations in writing were made to the FAC Chair. However, no evidence was received that responses to decision making are available to the public.

3.5.3 Fishery-Specific Management

Objectives for the Fishery

WCPFC

Long-term objectives for fisheries within the waters of the Convention area are found within the WCPF Convention text. Under Article 2 the Commission has the objective to 'ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks within the Convention area, consistent with UNCLOS and UNSFA. Article 5 provides principles and measures for achieving this conservation and management objective. Article 10(c) provides the explicit long-term objective of 'maintaining or restoring populations' to "above levels at which their reproduction may become seriously threatened". Article 5 (c) explicitly requires CCMs to apply the precautionary approach 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 UNSFA. These guidelines provide additional objectives to guide decision-making, including the use of target reference points to meet management objectives and the adoption of fisheries management strategies to ensure that target reference points are not exceeded on average.

PNA

The PNA has also established long term objectives for the LL VDS as outlined in Article 2 of the Management Scheme (LL VDS). These are:

To enhance the management of longline fishing vessel effort in the waters of the Parties by encouraging collaboration between all Parties, and:

- promote optimal utilization, conservation and management of tuna resources;
- maximize economic returns, employment generation and export earnings from sustainable harvesting of tuna resources;
- support the development of domestic locally based longline fishing industries;
- secure an equitable share of fishing opportunities and equitable participation in the tropical longline fisheries for the Parties;
- increase control of the tropical longline fishery for the Parties;
- enhance data collection and monitoring of the fishery;
- promote effective and efficient administration, management and compliance; and
- encourage collaboration between the Parties.

Solomon Islands

As a Party to the UNFSA, WCPF Convention and the Nauru Agreement, Solomon Islands has accepted the obligation to comply with the provisions of these Agreements, in particular the obligation to apply the principles in those agreements, including the precautionary approach and the need for compatible management arrangements, in their EEZ. It also has an obligation to ensure that domestic management arrangements are consistent with broader regional and international obligations, including their objectives.

Due to the nature of this fishery and the fact it only takes place within the Solomon Islands EEZ, the primary focus of management and control is the Solomon Islands fisheries legislation and the management plan objectives.

Fisheries Management Act 2015 - objectives

"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."

Tuna Management and Development Plan 2015

The TMDP further develops this and set as its overarching objective:

"Tuna fisheries are managed to ensure Solomon Islands receives maximum economic and social benefits from the sustainable use of its resources."

The TMDP states:

"The overall objective is logical, supported by law, and considered to have wide stakeholder support. It describes the essential aims that MFMR pursues when exercising its mandate under the law to safeguard the nation's fish resources.

MFMR's role is ultimately determined by the identification of specific fisheries management and development goals that it will pursue. In the following sections, those goals are described and paired with appropriate guiding principles. These principles will be kept in mind when identifying and implementing the strategies considered likely to be compatible with achieving the goals."

The goals are set out below, the Plan states that each specific goal has a clear and deliberate purpose and the achievement of each will contribute directly to the overall objectives of tuna fisheries management as set out in the Plan.

- To ensure that fish stocks are maintained at sustainable levels to support profitable fisheries.
- To safeguard Solomon Islands' tuna resources against over-exploitation and the risk of biological decline, so that the Solomon Islands may continue to benefit from its tuna resources in perpetuity.
- To manage fisheries within recognised principles of ecosystem approach to fisheries management.
- To address the protection of the tuna fish stocks and the ecosystem environment that supports these stocks, in line with international agreements and conventions.
- To maximise employment opportunities for Solomon Islanders.
- Whilst recognizing the importance of income generation from distant water fisheries, to ensure that priority is given to employment generation and value addition from the production and processing of tuna.

- To increase investment in fisheries and Government income from the tuna fishery sector.
- To ensure and facilitate the generation of employment through promotion of the Solomon Islands investment strategy.
- To ensure good governance, management and compliance systems are in place.
- To strengthen the efficiency and resourcing of fisheries compliance activities that can help to eliminate piracy, reduce illegal fishing and effectively support the implementation of the harvest control rules.
- To enhance Solomon Islands' influence at regional and international management organizations.

To endorse the principles of regional cooperation by participating in relevant RFMOs and ensure that required data and information is provided according to requirements of respective RFMOs for the benefit of sound tuna fisheries management.

Fisheries Regulations to Meet Objectives

As outlined in previous sections, the legislative arrangements, policy framework, and license conditions are all structured to meet the objectives of the Fisheries Management Act 2015 and the Tuna Management and Development Plan 2015.

The Plan provides a detailed roadmap with indicators, means of verification and necessary assumptions in order to track that objectives are being pursued. It has specific goals which it identifies as embracing the four principles of good fisheries management. These are:

- Sound fisheries conservation, endorsed by adopting harvest control strategies, rules, and tools linked to national and distant water fleet characteristics (Goals 1, 2, 4 and 6).
- Economic sustainability and preservation of incomes, secured through a management system that promotes domestication of industry and income generation without perversely creating incentives for overfishing (Goals 3 and 5).
- Ecosystem-based management that protects the marine habitat for the tuna resources along with fishers and other resource users (Goals 2 and 6).
- Good governance, supported by the establishment of the overarching management plan, with specific activities defined for the relevant stakeholders, with the decision-making process linked to proactive participation by the relevant stakeholders (Goals 1, 2, 3, 4, 5 and 6).

Review and Audit of the Management Plan

The Fisheries Advisory Council (FAC), established by the Fisheries Management Act 2015, and made up of Ministerial appointees, is responsible for reviewing all elements of the Tuna Management and Development Plan. The FAC has not met since 2015 and as such has not been undertaking this function. The Plan is a five-year Plan but is intended to be updated as required. It anticipates changes in management as national expectations, regional management measures and the role of fisheries resources in the national economy change.

The Plan states that MFMR will maintain contact with stakeholders and keep abreast of developments in the regional and national and context.

Table 1 of the Plan provides details of the Outcomes and Activities associated with each outcome as well as how these will be monitored.

3.5.4 Recognized Interest Groups

Solomon Islands tuna is harvested by commercial purse seine, pole and line, and longline vessels operating under license from the Solomon Islands government, represented by MFMR. Longline vessels, both foreign and chartered, harvest yellowfin, bigeye, and albacore. NFD is one of four companies operating in Solomon Islands waters. These tuna operators are members of the Tuna Industry Association Solomon Islands (TIASI) and use this association to interact with MFMR and the Solomon Islands Government more generally.

Other stakeholders with an interest in the Solomon Islands tuna management process include domestic purse seine, pole and line, and longline license holders; foreign purse seine and longline license holders; processors, the Solomon Islands government, industry organizations, regional organizations, customary users, and several environmental groups.

Solomon Islands' local communities fish for tuna on a non-commercial or artisanal basis[14]. The Fishery Management Act 2015, explicitly sets out customary fishing rights: Customary rights shall be fully recognized and respected in all activities falling within the scope of this Act. Commercial fishing is prohibited within 3 nm of the shore unless specifically approved. The longline fishery for yellowfin and albacore tuna is licensed to operate only in the EEZ.

Arrangements for On-going Consultations

There are two main fora which provide for ongoing consultation in this fishery. They are the Fisheries Advisory Council and the Tuna Industry Association Solomon Islands.

[14] The Solomon Islands Tuna Management Development Plan, provides some information on these fisheries. It states "The TMDP covers all waters from 3 nautical miles (NM) out to the 200NM Exclusive Economic Zone including archipelagic waters. The TMDP does not apply directly to waters inside 3NM as these are managed by communities (through customary ownership rights) and Provincial Governments. The TMDP does, however, address the need to manage stocks outside 3NM to help ensure adequate catch rates within 3NM."

4. Evaluation Procedure

4.1 Harmonized Fishery Assessment

For this assessment, harmonization is required as follows:

Principle 1: Principle 1 scores for yellowfin and albacore in the WCPO have been agreed upon through a harmonization process that included aligning not only scores but also timelines for conditions.

Principle 2: As Principle 2 evaluates fleet specific impacts, the scores may vary based on each fleet's catch behavior and interactions. Therefore, harmonization is considered for consistency, but scores may vary. Explanations for these differences are provided only in cases where results vary more than a score of 15 points on the same performance indicators, among assessments. MSC v2.0 requires additional considerations under Principle 2 for Cumulative Impacts.

v2.0 of the MSC standard requires that any fishery under assessment that has spatial overlap with the Units of Assessment of any other MSC certified fisheries, be explicitly considered in Principle 2 for cumulative impacts. 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). However, the MSC Interpretations log[15] 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". In this case SCS has only considered cumulative considerations for this v2.0 fishery, relative to other overlapping v2.0 fisheries.

'Overlapping UoAs' are assessed at different levels depending on which PI is evaluated. For P2 primary species, teams need to evaluate whether the cumulative impact of overlapping MSC UoAs hinders the recovery of 'main' primary species. For secondary species, cumulative impacts only need to be considered in cases where two or more UoAs have 'main' catches that are 'considerable', defined as a species being 10% or more or the total catch. For ETP species, the combined impacts of MSC UoAs needs to be evaluated, but only in cases where either national and/or international requirements set catch limits for ETP species. All of the requirements for cumulative impacts for species are applicable to their respective Outcome PIs. For habitats, in contrast, cumulative impacts are evaluated in the management PI (2.4.2). The requirements here aim to ensure that vulnerable marine ecosystems (VMEs) are managed such that the impact of all MSC UoAs does not cause serious and irreversible harm to VMEs.

Bigeye is the only main primary species in this fishery for which consideration of the cumulative impacts of all version 2.0 fisheries would apply. The overall status of Bigeye in the WCPO is discussed in PI 2.1.1.

[15] http://msc-info.accreditation-services.com/questions/assessing-p2-species-cumulatively-between-v2-0-and-1-3-fisheries/

In regards to catches/impact on Bigeye from other MSC assessments, the current catch of Bigeye in other MSC fisheries in 2015 was reported as 5960 mt in 2015 in the Fijian yellowfin and albabore MSC assessment (Gasgoine and McLoughlin, 2018). The MSC SZLC CSFC & FZLC FSM EEZ Longline Bigeye Tuna fishery caught 746 mt in 2016 and the estimated annual catch of Bigeye for this UoA is ~100mt. This brings the total estimated MSC Bigeye catch to 6,806 mt, which is approximately 5% of the 2017 WCPO catch of Bigeye. Thus, the team has concluded that the MSC UoAs in the Solomon Islands yellowfin and albacore longline fishery will not hinder rebuilding or recovery of Bigeye.

For secondary species, cumulative impacts only need to be considered in cases where two or more UoAs have 'main' catches that are 'considerable', defined as a species being 10% or more or the total catch.. The other main secondary species is bait, which during the initial assessment is believed to primarily consist of Goldstripe sardinella. However, only qualitative information is available and conditions have been placed on 2.2.1-2.2.3. No other MSC fisheries has identified the Goldstripe sardinella as a main secondary species and therefore cumulative impacts do not need to be assessed. As more information regarding the bait species provenance is gathered, the assessment team will ensure cumulative impacts are considered, if necessary.

For ETP species, the combined impacts of MSC UoAs needs to be evaluated, but only in cases where either national and/or international requirements set catch limits for ETP species. There are no national and/or international requirements set for catch limits for any of the ETP species considered here, so cumulative impacts do not need to be addressed.

All of the requirements for cumulative impacts for species are applicable to their respective Outcome PIs. For habitats, in contrast, cumulative impacts are evaluated in the management PI (2.4.2). The requirements here aim to ensure that vulnerable marine ecosystems (VMEs) are managed such that the impact of all MSC UoAs does not cause serious and irreversible harm to VMEs. The Solomon Islands longline fishery does not interact with any VME habitat. Harmonization is not required for Principle 2 at this stage.

Principle 3: This fishery overlaps with the MSC certified Solomon Islands skipjack and yellowfin tuna purse seine and pole and line. Both fisheries operate exclusively within the EEZ of the Solomon Islands. The Principle 3 scores for certified Solomon Islands skipjack and yellowfin purse seine and pole and line fishery were considered for harmonization purposes.

Table 15. Fisheries in the MSC System Considered for Harmonization for the WCPC Yellowfin and South Pacific Albacore Stocks and for Principle 3.

	Fishery	Status	Principles for Harmonization	Conformity Assessment Body
1	American Samoa EEZ albacore and yellowfin longline	Certified	Principle 1	CU Pesca
	AAFA and WFOA South Pacific albacore tuna	Certified	Principle 1	MRAG Americas, Inc.
2	Fiji albacore and yellowfin tuna longline	Certified	Principle 1	Acoura/LR
3	French Polynesia albacore and yellowfin longline	Certified	Principle 1	CU Pesca
4	MIFV RMI EEZ Longline Yellowfin and Bigeye Tuna	Certified	Principle 1	CU Pesca
	New Zealand albacore tuna troll	Certified	Principle 1	Lloyds Register (Acoura)
5	Pan Pacific yellowfin, bigeye and albacore longline fishery	Under Assessment	Principle 1	CU Pesca
6	PNA Western and Central Pacific skipjack and yellowfin tuna	Certified	Principle 1	Acoura/LR
7	PNG Fishing Industry Association's purse seine Skipjack & Yellowfin Tuna Fishery	Under Assessment	Principle 1	SCS
8	PT Citraraja Ampat, Sorong pole and line skipjack and yellowfin tuna	Certified	Principle 1	DNV GL
9	Kiribati albacore, bigeye and yellowfin tuna longline fishery	Under Assessment	Principle 1	CU Pesca
12	Solomon Islands skipjack and yellowfin tuna	Certified	Principle 1 & 3	SCS
13	SZLC, CSFC & FZLC Cook Islands EEZ South Pacific albacore & yellowfin longline	Under Assessment	Principle 1	CU Pesca
14	Tri Marine Western and Central Pacific skipjack and yellowfin tuna	Certified	Principle 1	CU Pesca
15	Tropical Pacific yellowfin and skipjack tuna free-school purse seine fishery	Certified	Principle 1	SCS
16	Walker Seafood Australia albacore, yellowfin tuna and swordfish	Certified	Principle 1	CU Pesca
17	WPSTA Western and Central Pacific skipjack and yellowfin free school purse seine	Certified	Principle 1	CU Pesca

4.2 Previous assessments

The Solomon Islands longline yellowfin and albacore fishery is undergoing MSC full assessment for the first time. Thus, there are no previously open conditions to report.Assessment Methodologies

This assessment was conducted by SCS Global Services, an accredited MSC certification body. The fishery was assessed using the MSC Certification Requirements Version 2.0, October 1 2014 utilizing process

requirements found in FCR V2.0 and GCR V2.2., and the reporting template used in this report is V4.0. The default assessment tree was used without adjustments. The fishery will remain under V2.0 of the Certification Requirements for all performance requirements (PISGs) for the five year duration of the certificate cycle, should the fishery be found capable of scoring at a level that confers certification.

4.3 Evaluation Processes and Techniques

4.3.1 Site Visits

The assessment team selected visit sites and interviewees based on information needed to assess management operations of the unit of assessment. The client group and other relevant stakeholders helped identify and contact fisheries management, research, compliance, and habitat protection personnel and agency representatives. Before the site visit and meetings were conducted, an audit plan was provided to the client and relevant stakeholders. The on-site meetings took place in Honiara and Noro, Solomon Islands between February 11-14th 2019. The assessment team visited agency offices including the Ministry of Fisheries and Marine Resources (MFMR), the Forum Fisheries Agency (FFA), , and also visited the client offices in Honiara and Noro. A skype call was also arranged with one stakeholder (the Partners to the Nara Agreement Office, PNAO) and staff of the Secretariat to the Pacific Community (SPC) the Science Services Provider to the Western and Central Pacific Fisheries Commission (WCPFC).

Table 16. Audit Plan: Attendees

No.	Name	Role	Affiliation
1	Alexander Morison	Team Leader, PI and P2 expert	SCS Global Services
2	Frank Meere	P3 expert	SC S Global Services
3	Sergio Consado	ASI Auditor	ASI
4	Amanda Hamilton	Senior Manager – Fisheries Policy & Regulation	Tri Marine International (TMI) (via skype)
5	Angelina Tan Wei Li	Assistant Manager – Fisheries Policy & Sustainability	TMI
6	Frank Wickham	General Manager	National Fisheries Developments (NFD)
7	Russell Dunham	Director	NFD
8	Cynthia Wickham	Pole & Line and Longline Operations Manager	NFD
9	Peter Williams	Fisheries Scientist	SPC (remotely via skype)
10	Graham Pilling	Fisheries Scientist	SPC (remotely via skype)
11	Ferral Lasi	Acting Permanent Secretary	MFMR
12	Eddie Honiwala	Director	MFMR
13	Francis Tofuakalo	Deputy Director – Offshore Fisheries	MFMR
14	Derek Tagosia	E-monitoring Coordinatior	MFMR
15	Selina Lipa	Licencing Officer	MFMR
16	Charles Tobasala	Compliance Officer	MFMR
17	Jan Pitu	Compliance	MFMR
18	Harold Vilia	Observer Coordinator	MFMR
19	Derick Suiame	Fisheries Officer (inspections)	MFMR (Noro)
20	Alick Maeorea	Fisheries Officer (inspections)	MFMR (Noro)
21	Tim Adams	Director – Fisheries Management	FFA
22	Brian Kumasi	Fisheries Management Advisor	FFA
23	Vivian Fernandes	Compliance Policy Officer	FFA
24	Ludwig Kumoru	CEO	PNAO (remotely via skype)
25	Patricia Jack	VDS Manager	PNAO (remotely via skype)
26	Sanga'a Clark	Advisor	PNAO (remotely via skype)
27	Les Clark	Advisor	PNAO (remotely via skype)
28	Richard Banks	Advisor	PNAO (remotely via skype)
29	Maurice Brownjohn	Advisor	PNAO (remotely via skype)

Table 17. Audit Plan: Key Meetings and Locations

	Meeting Date	Location	Topic	Attendees
1	11 Feb 2019	NFD Offices, Honiara	Opening meeting	1-5, 7 & 8
2	11 Feb 2019	NFD Offices, Honiaria	Stakeholder meeting with MFMR	1-5, 7, 8, 11-13
3	12 Feb 2019	MFMR E-monitoring offices	Stakeholder meeting with MFMR	1-3, 5, 8, 11-14
4	12 Feb 2019	NFD Offices, Honiaria; Skype call	Stakeholder meeting with PNAO	1-5, 8, 25-29
5	12 Feb 2019	FFA Offices, Honiara	Stakeholder meeting with FFA	1-4, 8, 22
6	13 Feb 2019	NFD Offices, Noro	Stakeholder meeting with SPC	1-5, 7-10
7	14 Feb 2019	NFD Offices, Noro	Stakeholder meeting with MFMR regional staff	1-5, 8, 19, 20
8	14 Feb 2019	NFD Offices, Noro	Closing meeting	1-5, 7, 8

4.3.2 Consultations

In addition to the meetings and attendees list above (Section 4.4.1), consultations have included large numbers of phone and email exchanges. A number of key organizations were contacted in advance of the fishery's formal entry into public full assessment by the team leader, by phone. SCS also worked with MSC outreach in advance of the fishery entering full assessment, to compile an extensive stakeholder list used for emailing announcements and assessment progress to stakeholders. This list contained over 300 individuals from approximately 100 organizations spanning the government, private, and non-profit sectors.

No written stakeholder comments were received prior to the onsite meeting but a written submission from the PNAO provided after the onsite meeting was considered as part of harmonization discussions among CABs for Principle 1 scores. Stakeholder comments were also submitted by ISSF. The assessment team has responded to these comments (Appendix 3 Stakeholder Submissions).

4.3.3 Evaluation Techniques

Documentation and Information Gathering

One of the most critical aspects of the MSC certification process is ensuring that the assessment team gets a complete and thorough grounding in all aspects of the fishery under evaluation. In even the smallest fishery, the assessment team typically needs documentation in all areas of the fishery from the status of stocks, to ecosystem impacts, through management processes and procedures.

Under the MSC program, it is the responsibility of the applying organizations or individuals to provide the information required proving the fishery or fisheries comply with the MSC standards. It is also the responsibility of the applicants to ensure that the assessment team has access to any and all scientists,

managers, and fishers that the assessment team identifies as necessary to interview in its effort to properly understand the functions associated with the management of the fishery. Last, it is the responsibility of the assessment team to make contact with stakeholders that are known to be interested, or actively engaged in issues associated with fisheries in the same geographic location.

Information for the assessed was gathered from stakeholder comments prior to the onsite visit (and after), and via phone conversations.

In addition to the client representatives of the client, SPC staff and staff of the MFMR facilitated provision of key documentation, including observer reports. Scientific and management information was also sourced from documentation available through the WCPFC website (www.wcpfc.int). National and international management agency representatives were helpful and cooperative throughout the process.

Scoring and Report Development Process

1. **Onsite Visit:** Scoring was initiated during the 5 day site visit and completed iteratively through phone calls, emails and skype teleconferences between February and July 2019.

2. **Additional Document Submission:** Following the onsite visit, the team compiled a list of requested documents for the client for submission prior to scoring. This included additional information on the quantities, species composition and sources of bait and further information related to management and compliance measures.

3. **Client Draft:** Rationales and associated background was developed by respectively assigned assessment team members, and then cross read by team members and SCS staff for production of the client draft report. Scoring was completed by consensus through this review process and team meetings by phone and email. The fishery received a total of 10 scoring-issue level conditions within 10 performance indicators. The team finalized scoring and submitted the Client Draft in July 2019. Following initial receipt of the client draft of the report, comments and relevant information for the assessment process was submitted by the client group in August, 2019. This resulted in clarification of milestones/conditions but did not change rationales for scoring. From June through July, the client fishery worked with SCS to generate an acceptable client action plan, which was structured at the performance indicator level.

4. **Peer Review**: Based on comments from peer reviewers the team modified content related to Principle 2 adjusting the following scores: 2.3.3 (a,b) from SG80 to SG60 and 2.2.3 from 70 to 60. These changes were then submitted to the client to review prior to the publication of the PCDR. The PCDR was published September 6 2019 and subject to a 30 day stakeholder comment period that terminated on October 5, 2019

5. **Stakeholder Comment on PCDR:** One stakeholder comment letter was received from ISSF, in addition to a Technical Oversight (TO) report from MSC and a follow-up review from Peer-Reviewer A. Both of these are included in Appendix 3 with assessment team responses. These

comments did not result in any material changes to the report, but in some cases resulted in additional clarifications and corrections to the text. These revisions have been incorporated into the Final Report, which once posted will be subject to a 15-working day stakeholder objection period.

Scoring Methodology

The assessment team followed guidelines in MSC FCR v2.0 Section 7.10 "Scoring the fishery". Scoring in the MSC system occurs via an Analytical Hierarchy Process and uses decision rules and weighted averages to produce Principle Level scores. There are 28 Performance Indicators (PIs), each with one or more Scoring Issues (SIs). Each of the scoring issues are considered at the 60, 80, and 100 scoring guidepost levels. The decision rule described in Table 18 determines the Performance Indicator score, which must always be in an increment of 5. If there are multiple 'elements[16]' under consideration (e.g. multiple main primary species), each element is scored individually for each relevant PI, then a single PI score is generated using the same set of decision rules described in Table 18.

Table 18. Decision Rule for Calculating Performance Indicator Scores based on Scoring Issues, and for Calculating Performance Indicator Scores in Cases of Multiple Scoring Elements. (Adapted from MSC FCRV2.0 Table 4)

Score	Combination of individual SIs at the PI level, and/or combining multiple element PI scores into a single PI score.
<60	Any scoring element/SI within a PI which fails to reach SG 60 shall not be assigned a score as this is a pre-condition to certification.
60	All elements (as scored at the PI level) or SIs meet SG 60 and only SG 60.
65	All elements/SIs meet SG 60; a few achieve higher performance, at or exceeding SG 80, but most do not meet SG 80.
70	All elements/SIs meet SG 60; half* achieve higher performance, at or exceeding SG 80, but some do not meet SG 80 and require intervention action to make sure they get there.
75	All elements/SIs meet SG 60; most achieve higher performance, at or exceeding SG 80; only a few fail to achieve SG 80 and require intervention action.
80	All elements/SIs meet SG 80, and only SG 80.
85	All elements/SIs meet SG 80; a few achieve higher performance, but most do not meet SG 100.
90	All elements/SIs meet SG 80; half achieve higher performance at SG 100, but some do not.
95	All elements/SIs meet SG 80; most achieve higher performance at SG 100, and only a few fail to achieve SG 100.
100	All elements/SIs meet SG 100.

**MSC FCRV2.0 uses the word 'some' instead of half. SCS considers 'half' a clearer description of the methodology utilized.*

[16] MSC FCRV2.0 7.10.7: In Principle 1 or 2, the team shall score PIs comprised of differing scoring elements (species or habitats) that comprise part of a component affected by the UoA.

When calculating the Principal Indicator scores based on the results of the Scoring Issues (SI), SCS interprets the terms in the Table 2 as following:

- **Few:** Less than half. Ex: if there are a total of three SIs, one SI out of 3 is considered few.
- **Some:** Equal to half. Ex: if there are a total of four SIs, two SIs out of 4 is considered some.
- **Most:** More than half. Ex: if there are a total of three SIs, two SIs out of 3 is considered most.

The catch composition was evaluated across all flag states together, and species were categorized for MSC evaluation (primary, secondary, ETP, main/minor). Elements evaluated in the scoring of the fishery are detailed in Section: Overview of Non-target Catch and specifically in the following tables: Table 10, Table 11, and Table 12. Only bigeye tuna was evaluated as a primary main species, and bait species were evaluated as secondary main. No other species were main species. Principle 1 species consisted of yellowfin and albacore.

The tables referenced above indicate whether species are data deficient based on available information regarding stock status. We note that this does not directly align with Table 3 (FCRv2.0 criteria for triggering the RBF). There are minor secondary species for which there are no reference points available. However, all these species are caught in extremely low volume, and it was determined that the RBF was not a necessary or useful tool in evaluating the risk of impact on these species.

In summary, for Principle 1 there are two sets of tables, one for each target stock. In Principle 2, the evaluation has been combined across the two target stocks, since these target stocks are pursued together using the same gear, bait, and the catch composition.

Also notable under Principle 2, because albacore and yellowfin are scored thoroughly under Principle 1, they are not scored a second time as primary species. A target species that is certified under Principle 1 and has obtained an overall score >80 for P1, will have already be assessed under a higher standard of performance than those for main retained/primary under Principle 2, thus it is expected to obtain a score >80 for the relevant Principal Indicators under P2. If in a subsequent assessment one of the target P1 target species fails and is no longer considered as certified, it will then be scored under Principle 2.

Scoring under Principle 3 considers all applicable biological and/or jurisdictional levels that apply to the management system of the UoA (GSA4.1.1).

The MSC provides a mandatory Excel template that facilitates the calculation of Principle level scores. Within the Excel template (and provided in Section 6.2) PIs are organized into components, where each PI within a component is weighted equally (**PI weight**), where the sum of PI weights per component equals 1. Multiple components make up each Principle, and components are likewise weighted (evenly, except in Principle 1) (**Component weight**), where the sum of component weights per Principle equals 1. The PI weight within the component multiplied by the component weight within the Principle provides a weight for each PI within the Principle (**PI weight * Component weight= PI Principle weight**). Each PI score is then multiplied by its weight within the Principle (**PI Principle weight**), and all weighted PI values are summed to generate a Principle level score, reported to the nearest one decimal place in accordance with MSC FCRV2.0 (7.10.3)

The decision rule for MSC certification is based on the resulting Principle level scores and is as follows:

- No PIs score below 60
- The aggregate score for each Principle, rounded to the nearest whole number, is 80 or above

5. Traceability

5.1 Eligibility Date

The target eligibility date is the same as the date of certification. The fishery became certified on November 28, 2019. The traceability and segregation systems that are required to ensure the separation of any certified product from the non-certified product are believed to be already in place for the client's fleet.

At present, the fishery does not use the blue MSC ecolabel on the product.

5.2 Traceability within the Fishery

The following traceability evaluation is for the UoC/UoA covering South Pacific Albacore Tuna (*Thunnus alalonga*) and Western and Central Pacific Yellowfin Tuna (*Thunnus albacare*s), captured with the use of pelagic longlines by vessels operating within the Solomon Islands EEZ. The UoC and UoA are restricted to locally-based vessels operating under charter agreements held by NFD or those flagged to Fiji operating under bilateral agreements in the Solomon Islands. The vessels initially assessed are identified in Section 3.1.1. The reader is directed to the fisheries certificate for the most up-to-date vessel list.

Below we've listed the main stages of the supply chain within the Solomon Islands longline tuna fishery and the relevant tracking, tracing and segregation systems at each step:

Capture of Product

The UoA and UoC are the same for this certificate. The UoC comprises longline vessels operating as 'locally based' per agreements with local companies, and only covers vessels under charter arrangement with NFD (vessel list at the time of the PCR is in section 3.1.1). NFD, along with other companies, allocated licenses to vessels based on a Memorandums of Understanding (MOU) with the MFMR. All vessels operate under consistent licensing conditions, regardless of the flag state. The operating arrangements for Fijian flagged vessels specified by MFMR are similar to the charter arrangements for locally-based vessels.

In a single trip, vessels may make sets both within and outside the Solomon Islands EEZ. Only fish caught within the Solomon Islands EEZ is evaluated in this report and considered MSC-eligible. Trips that include sets in the high seas or other areas outside of the Solomon Islands EEZ are not MSC eligible. This information is verified using documentation and process described in the Product Unloading section below.

Upon the landing of the catch on the vessel, the retained catch is processed on board (removal of gills, guts, tails, and fins) and then quick-frozen before storage in the freezer). Catch information is recorded on SPC logbooks, where species, number of individuals, and time/coordinates of the set are recorded. Longline vessels have only a single well for storage and there is no segregation of retained catch across sets.

The following requirements are specified under the charter agreements:

- Vessels are required to land all catch in the Solomon Islands
- NFD requires vessels operating under its licenses to offload at Noro, Solomon Islands
- All catch is inspected and recorded in the Solomon Islands and all landings and inspections are monitored by MFMR Fisheries Officers
- Daily reports, including all catch and bycatch, both manually and electronically using the FFA/SPC Regional Logsheet to MFMR;
- Report via VMS every four hours

Product Unloading, Sale, and First Change of Ownership

As stated above, vessels are required to land all catch in the Solomon Islands and NFD charter agreements stipulate that vessels must offload at Noro, Solomon Islands. There is 100% inspection of landings by Fisheries Officers employed by MFMR in addition to NFD company representatives.

During landings/port inspection the Fisheries Officers check where the vessel has been fishing (via VMS and logbook), the vessel license conditions, and the unloading. 48 hours' notice is required prior to port entry. If an observer is on the vessel, they provide their trip report on port arrival. Where product is landed, NFD weigh and record each fish, this information is provided to MFMR. Daily reports of fishing activity are provided to MFMR.

Upon landing, fish is purchased directly from NFD chartered longline vessels by NFD's parent company, Tri Marine International Pte. Ltd., with a handling fee paid to NFD. Fish is transferred to cold storage or stuffed directly into containers for export or delivered to Tri Marine's Noro-based processing facility for processing into frozen cooked loins or canned tuna. **Given the fisheries certificate only covers catch up to the point of landing, any shore-based operations will need to be subject to separate CoC certification**. Tri Marine already has a Group CoC certification which covers NFD's unloading wharf, cold storage and container operations, as well as Maersk's Starloader based at Solomon Island's Port Authority. Soltuna has its own CoC certification. All CoC certificates that will be the first receivers of the fish conduct sorting by species and size under their CoC certificate. Conformance with sorting of fish will be assessed through CoC audits. Any processing facilities in other locations purchasing whole round fish or processed frozen loins ex-Soltuna in other locations wishing to handle or make a claim on MSC certified product, will require their own CoC certification.

Longline albacore that is not delivered to Soltuna is exported in whole round form, mostly to Thailand, for processing into canned tuna for the US market. Whole round yellowfin is ultra-low temperature frozen for sashimi markets primarily in Japan and the US.

Product Transport and Storage

Once the catch is landed on the deck, tuna are processed and flash frozen and stored in the freezer until offload. All information is recorded in SPC logbooks and is reported (manually and electronically) to MFMR. Retained catch data is cross-validated with logbook records at offload in Noro, Solomon Islands for UoC vessels. Logbook data and offload sheets record quantities, trip number, vessel, and dates. The adequacy of traceability systems of the client group during transportation and storage activities after landing of certified catch are beyond the scope of the fishery certificate, and are to be evaluated as part of the scope of an MSC CoC audit.

The assessment team has determined that there is sufficient robustness of the management systems as they relate to traceability for the fishery certificate to extend up to the point of landing at Noro, Solomon Islands.

Table 19. Traceability Factors within the Fishery:

Traceability Factor	Description of risk factor if present. Where applicable, a description of relevant mitigation measures or traceability systems (this can include the role of existing regulatory or fishery management controls)
Potential for non-certified gear/s to be used within the fishery	The UoC comprises pelagic longline gear. There is minimal risk that non-certified gear could be used within the fishery. Other commercial fishing gear types targeting tuna used in Solomon Islands include purse-seine (free-school and anchored FAD), and pole and line. The client holds a MSC certificate for these two gear types within the Solomon Islands. Measures also include mandatory unloading in port, 100% port inspections of all offloadings by MFMR staff to verify the unloaded catch and any catch that is retained onboard, and reviews of VMS tracks to ensure there was no transshipment of product outside of port. MFMR officers physical board the vessel prior to and post offload. During the offload, the following steps/information is recorded: vessel (gear type/company) and date is recorded on the offload sheet, then tuna are sorted by size and species, weighed, and then MSC eligibility is determined. Gear type is verified in the offload procedure. This fishery certificate only covers product up to the point of landing (port or onto a carrier). MSC Chain of Custody is required after the point of landing.
Potential for vessels from the UoC to fish outside the UoC or in different geographical areas (on the same trips or different trips)	The UoA and the UoC are equivalent. Vessels may fish inside and outside the Solomon Islands EEZ on the same trip. Trips that include sets in the high seas or other areas outside of the Solomon Islands EEZ are not MSC eligible. All fish are landed at a port in the Solomon Islands. There is 100% port sampling for all offloads from UoC longline vessels, where product is received either at the client's dock (i.e. NFD dock) or at the Soltuna dock. Soltuna is Solomon Island's only tuna loining and canning processor. At landing, the first receivers will use a monitoring system to verify trip eligibility using logbooks and VMS data. The adequacy of this system must be evaluated during Chain of Custody audits. Product is either offloaded at a Noro-based processing plant owned by the client or into cold storage/containers which are covered under existing CoC certifications held by the client. Fijian flagged vessels represent a unique risk. For any product landed by Fijian vessels in the Solomon Islands to be considered eligible, no high seas fishing activity can have occurred. Fish caught within the Solomon Islands EEZ and

	transported to Fiji by Fijian flagged vessels is not eligible for MSC certification at this time. For mixed trips to be considered eligible for MSC, UoC vessels would need to have a Chain of Custody certification and their systems would be evaluated by a qualified CoC auditor. This is not a consideration at this time.
Potential for vessels outside of the UoC or client group fishing the same stock	There are three other companies operating locally-based chartered vessels within the Solomon Islands. Vessel masters/owners can choose not to land product in the Solomon Islands or to sell to other domestic companies besides NFD. For product to be MSC eligible under this certificate, it must be caught by a vessel operating under a local charter agreements with NFD, and be sold to Tri Marine. There is little traceability risk posed by vessels outside of the UoC because of a 100% port sampling coverage combined with requirement that product must be offloaded in Noro. The three potential offload sites in Noro include NFD's Kitano wharf and Solomon Islands Port Authority wharf (both of which are covered under Tri Marines' Group CoC certification) and Soltuna wharf (which is majority owned by Tri Marine and has its own CoC certificate),. Soltuna is the only loining/canning operation in the Solomon Islands.
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)	The UoC is restricted to trips targeting albacore and yellowfin with pelagic longlines from vessels fishing **solely** in Solomon Islands EEZ waters. If any fishing activity occurs outside of the EEZ, the trip is disqualified for MSC. All tuna product is landed in Noro within the Solomon Islands (as specified by NFD charter arrangements). Another area of risk is potential substitution if vessels commence a fishing trip with fish remaining in the holds, which may have been from non-certified waters. To remove this risk, the company will require vessels to fully offload all catch prior to initiating another fishing trip. This will be done by the CoC first receivers listed in this report, who will cross-validate the retained catch data with logbook records at offload in Noro, Solomon Islands for UoC vessels by the fish receivers. Logbook data and offload sheets record quantities, trip number, vessel, and dates. Adherence to this procedure will be assessed and covered under CoC audits, as the fishery certificate only extends up to the point of landing. MFMR physically boards 100% of vessels pre- and post offload and verifies reported catch against the quantities observed on the vessel. Thus, any catch retained past offload would be captured in the next logbook and would need to be showed to MFMR upon the next offload.

Risks of mixing between certified and non-certified catch during processing activities (at-sea and/or before subsequent Chain of Custody)	At-sea processing is restricted to removal of gills, guts, tails and fins and then quick-frozen before storage in the freezer. There is no method for segregating fish caught on the high seas from that caught within the UoC, as there is no need to implement on board catch-separation. As previously stated, trips that include sets in the high seas or other areas outside of the Solomon Islands EEZ are not MSC eligible and will be verified upon offloading at the port using VMS and logbook information.
Risks of mixing between certified and non-certified catch during transhipment	All catch will be offloaded at port in the Solomon Islands.
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	The assessment team has not identified any other traceability risks.

5.3 Eligibility to Enter Further Chains of Custody

The team has concluded and determined that the product originating from the UoC will be eligible to enter further certified chains of custody and be sold as MSC certified or carry the MSC ecolabel. **The change of ownership takes place when the product is offloaded from the vessel and Chain of Custody commences at that point.** The only valid initial landing point is Noro, Solomon Islands. Any transshipments must occur within port in Noro. Only catch from vessels operating under a charter agreement with NFD and offloading catch at Noro (either at the NFD dock, Soltuna, or into Tri Marine Group of Companies ownership) is considered eligible to enter further chains of custody and be sold as MSC certified.

Lists of documents to be solicited by CoC auditor at point where CoC is required [i.e. logbook data from the fishing vessel, offload summary] shall be requested by the CoC auditor. The auditor should verify that the logbook information confirms that all sets were within Solomon Islands EEZ and that the vessel holds (or held at the time of landing) a valid charter agreement with NFD.

Below is a list of parties/categories of parties whose product will be eligible to use the fishery certificate and sell product as MSC certified with the blue eco-label:

- National Fisheries Developments, Ltd (NFD)
- Soltuna
- Tri Marine Group of Companies (and subsidiaries)

The eligible landing point is:

- Noro, Solomon Islands

5.4 Eligibility of Inseparable or Practicably Inseparable (IPI) stock(s) to Enter Further Chains of Custody

No IPI species were identified in this fishery, as pelagic longline vessels target larger bodied individuals and species identification is possible.

Evaluation Results

5.5 Principle Level Scores

Table 20 Final Principle Scores for yellowfin tuna and albacore

Final Principle Scores		
Principle	**Score – Yellowfin**	**Score - Albacore**
Principle 1 – Target Species	80.8	84.2
Principle 2 – Ecosystem	86.7	86.7
Principle 3 – Management System	82.3	82.3

5.7 Summary of PI Level Scores

Table 21. Summary of Performance Indicator Scores and Associated Weights Used to Calculate Principle Scores.

Principle	Component	Wt	Performance Indicator (PI)		Wt	Score ALB	Score YFT
One	Outcome	0.333	1.1.1	Stock status	1.0	100	90
	Management	0.667	1.2.1	Harvest strategy	0.25	70	70
			1.2.2	Harvest control rules & tools	0.25	60	60
			1.2.3	Information & monitoring	0.25	80	80
			1.2.4	Assessment of stock status	0.25	85	95
Two	Primary species	0.2	2.1.1	Outcome	0.333	100	100
			2.1.2	Management strategy	0.333	95	95
			2.1.3	Information/Monitoring	0.333	100	100
	Secondary species	0.2	2.2.1	Outcome	0.333	60	60
			2.2.2	Management strategy	0.333	75	75
			2.2.3	Information/Monitoring	0.333	60	60
	ETP species	0.2	2.3.1	Outcome	0.333	85	85
			2.3.2	Management strategy	0.333	75	75
			2.3.3	Information strategy	0.333	60	60
	Habitats	0.2	2.4.1	Outcome	0.333	100	100
			2.4.2	Management strategy	0.333	100	100
			2.4.3	Information	0.333	100	100
	Ecosystem	0.2	2.5.1	Outcome	0.333	100	100
			2.5.2	Management	0.333	100	100
			2.5.3	Information	0.333	90	90
Three	Governance and policy	0.5	3.1.1	Legal &/or customary framework	0.333	85	85
			3.1.2	Consultation, roles & responsibilities	0.333	75	75
			3.1.3	Long term objectives	0.333	90	90
	Fishery specific management system	0.5	3.2.1	Fishery specific objectives	0.25	90	90
			3.2.2	Decision making processes	0.25	75	75
			3.2.3	Compliance & enforcement	0.25	80	80
			3.2.4	Monitoring & management performance evaluation	0.25	80	80

5.8 Summary of Conditions

Table 22. Summary of Conditions

Condition number	Condition	Performance Indicator	Related to previously raised condition? (Y/N/NA)
1	Yellowfin: By the third 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 management objectives reflected in the target and limit reference points. Under advice from MSC (February 2019) in response to a joint CAB variation request, the deadline for closing harvest strategy conditions for all WCPFC tuna fisheries is 2021. This applies to all conditions on Principle 1.	**1.2.1 a**	NA
2	Yellowfin: SI a) By the third surveillance audit, demonstrate that well defined HCRs are in place for yellowfin tuna that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY. SI b) By the third surveillance audit, provide evidence that the selection of the harvest control rules for yellowfin tuna are robust to the main uncertainties. SI c) By the third surveillance audit, provide evidence that indicates that the tools in use for yellowfin tuna are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	**1.2.2 a,b,c**	NA
3	Albacore: By the third surveillance audit, demonstrate that the harvest strategy for albacore tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points.	**1.2.1 a**	NA
4	Albacore: SI a) By the third surveillance audit, demonstrate that well defined HCRs are in place for albacore tuna that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock	**1.2.2 a,b,c**	NA

Condition number	Condition	Performance Indicator	Related to previously raised condition? (Y/N/NA)
	fluctuating around a target level consistent with (or above) MSY. SI b) By the third surveillance audit, provide evidence that the selection of the harvest control rules for albacore tuna are robust to the main uncertainties. SI c) By the third surveillance audit, provide evidence that indicates that the tools in use for albacore tuna are appropriate and effective in achieving the exploitation levels required under the harvest control rules.		
5	By the fourth surveillance audit provide evidence that bait species classified as main used in the fishery are highly likely to be above biologically based limits OR 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.	**2.2.1 a**	NA
6	By the fourth surveillance audit, provide evidence that there is a partial strategy in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of bait species classified as main at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	**2.2.2 a**	NA
7	By the fourth surveillance audit, provide evidence that the available information is adequate to support a partial strategy to manage bait species classified as main.	**2.2.3 a, c**	NA
8	By the fourth surveillance audit, provide evidence that the measures/strategy for ETP species are being implemented successfully.	**2.3.2 d**	NA
9	By the fourth surveillance audit, provide evidence that 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 provide evidence that information is adequate to measure trends and support a strategy to manage impacts on ETP species.	**2.3.3 a, b**	NA
10	By the fourth surveillance audit, provide evidence that the management system includes consultation processes that regularly seek and accept relevant information from a range of sources, including local knowledge. Additionally, that the national	**3.1.2 b**	NA

Condition number	Condition	Performance Indicator	Related to previously raised condition? (Y/N/NA)
	management system demonstrates consideration of the information obtained.		
11	SI b) By the fourth surveillance audit, provide evidence that 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. SI d) By the fourth surveillance audit, provide evidence that 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.	**3.2.2 b,d**	NA

5.9 Determination, Formal Conclusion and Agreement

With the information available, the Solomon Islands yellowfin and albacore longline fishery meets the minimum requirements for being awarded certification which includes meeting the SG 60 for all Performance Indicators and an average score of 80 or greater for all three Principle scores. The team discussed the merits and shortfalls of the fishery and by consensus recommended certification for the fishery.

In accordance with MSC Certification Requirements, the findings were made open to objection by interested parties for a period of 15 working days from publication of the Final Report with the postive Certification Determination, from November 5th through to November 25th 2019. No objections were received. The SCS Certification Board reviewed the report, Performance Indicator rationales, peer reviews and stakeholder comments and agreed with the Assessment Team's recommendation to re-certify the fishery. The certificate will be awarded after the Public Certification Report is posted to the MSC website: https://fisheries.msc.org/en/fisheries/solomon-islands-longline-albacore-and-yellowfin-tuna-fishery/@@assessments

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Appendices

Appendix 1. Scoring and Rationales

Principle 1

There are two sets of Principle 1 scoring tables presented below. The first set of scores are for the target stock of Western and Central Pacific yellowfin tuna, and the second set, immediately following, is for Western and Central Pacific albacore.

Evaluation Table for PI 1.1.1 Yellowfin tuna Stock – 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	The diagnostic case from the 2017 stock assessment (Tremblay-Boyer et al. 2017) estimated that the spawning biomass was at 40% of unfished levels in 2015 and was well above the WCPFC limit reference point, 20%$SB_{F=0.5}$. Recruitment was also estimated to have been stable since the mid 1960s (Figure 12). The assessment considers both statistical uncertainty in the 'diagnostic case' and structural and data uncertainty across an uncertainty grid. As recommended by the assessment scientists, the SC has adopted the latter approach in framing its management advice and we have also accepted this approach for evaluating stock status here. In the analysis of model structural uncertainty in the assessment (Tremblay-Boyer et al. 2017), using a crosswise grid of 72 alternative model formulations, only two runs (<5%) fell below the limit reference point. Nevertheless, in the selection of 48 of the 72 runs that were selected by the SC as the basis for its advice (Table 4) the lower 10 percentiles for SBlatest/SBF=0 and SBrecent/SBF=0 were 0.22 and 0.20 respectively, indicating that the stock was close to the point at which there would no longer be a high degree of certainty (95% probability) that it was still above the LRP of 20% SBF=0 and will probably not reach it soon if the stock continues to decline. Previous modelling had also indicated that a biomass of this level for yellowfin tuna had a greater than 95% likelihood of being above the limit reference point of 20% of unfished levels (SPC-OFP 2014). A stock above this limit reference point is considered to be above the point where recruitment would be impaired. Furthermore, Pilling et al. (2014) used 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, and dependent upon the future recruitment assumption, it was exceptionally unlikely (<1%; long-term recruitment deviate assumption) or very unlikely (<10%; recent recruitment assumption) to fall below B_{MSY}.		

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
		There is, therefore, a high degree of certainty that the stock is above the point where recruitment would be impaired, which meets the requirements of scoring issue a at the SG 60, SG 80 and SG 100 levels.		
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	There is no explicit target reference point for yellowfin tuna but there is considered to be an implicit target of BMSY (supported by CMM 2016-01). The grid medians for both SBrecent/SBMSY and SBlatest/SBMSY in the most recent assessment were 1.42 (Tremblay-Boyer et al. 2017) which is well above this (default) target reference point and, given the estimated stock trajectory, would have done so over the whole period modelled. This meets the requirements of scoring issue b at the SG 80 level. Following SA2.2.1.3 a high degree of certainty means greater than or equal to the 95th percentile of a distribution. This assessment (unlike the previous one) does not provide 95% confidence intervals for the ratios SBrecent/SBMSY and SBlatest/SBMSY but across the grid of uncertainties only two runs (<5%) fell below the chance of the stock being below SBMSY over recent years. This finding might suggest that that yellowfin tuna now meets the requirements of scoring issue b at the SG 100 level. Nevertheless, previous assessment scores for Yellowfin tuna, based on the 2014 stock assessment (Rice et al. 2014), were that the SG 100 level was not met because the lower 95% confidence intervals for B/BMSY was less than 1 and the upper 95% confidence interval for F/FMSY was greater than 1. The 2017 assessment was slightly more optimistic but as the stock has recently been estimated to have been below that threshold the SG 100 requirement that stock be above MSY over recent years is still not met.		
References		Pilling et al. 2014, Rice et al. 2014, Tremblay-Boyer et al. 2017		

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)	Level of spawning biomass in the absence of fishing ($SB_{F=0}$) LRP: 20% $SB_{F=0}$	$SB_{F=0}$ = 2,592,702 t 0.2X $SB_{F=0}$ = 518,540 t	$SB_{latest}/SB_{F=0}$ = 0.46 > LRP $SB_{recent}/SB_{F=0}$ = 0.42 > LRP

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
Reference point used in scoring stock relative to MSY (SIb)	Level of spawning biomass relative to MSY (SB_{MSY})	SB_{MSY}=750,100 t	SB_{latest}/SB_{MSY} = 1.58 SB_{recent}/SB_{MSY} = 1.46
OVERALL PERFORMANCE INDICATOR SCORE:			Score
CONDITION NUMBER (if relevant): Condition			90

Evaluation Table for PI 1.1.2 Yellowfin tuna – 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	Not scored- Stock does not require rebuilding.		
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 evidence that the rebuilding strategies are rebuilding stocks, or it is likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild 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	Not scored
	Justification	Not scored- Stock does not require rebuilding.		
References				

PI 1.1.2	Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe	
OVERALL PERFORMANCE INDICATOR SCORE:		Score
CONDITION NUMBER (if relevant): Condition		N/A

Evaluation Table for PI 1.2.1 Yellowfin tuna – 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			
	Guidepost	The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG 80.	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 SG 80.	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 SG 80.
	Met?	Y	N	Not scored
	Justification	Agreed harmonized score: 60 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 – MSCI Vocabulary v1.1). The 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. There are, however, no formal harvest control rules. This conclusion is consistent with the results of extensive harmonisation discussions among CABs as described in detail in Section 4.1. The range of measures applied to the sectors that fish for yellowfin tuna are expected to achieve stock management objectives meeting the requirements of the SG 60 level. Nevertheless, the general stock decline for yellowfin (albeit with a recent increase in stock size), the absence of agreed harvest control rules within WCPFC or PNA for any other tuna species, and the record of the Commission failing to reduce fishing mortality on bigeye tuna when it was thought to have been subject to overfishing, 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. It is also not clear that coherent management actions are implemented throughout the range of the stock, particularly in Indonesia and the Philippines. Overall this prevents the conclusion that the strategy is designed to achieve stock management objectives. Yellowfin tuna is therefore considered to meet the SG 60 level of this scoring issue but not the SG 80 or SG 100 levels.		
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

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
				to maintain stocks at target levels.
	Met?	Y	Y	Not scored
	Justification	Yellowfin tuna have been estimated to be above default target levels and the status quo stock projections undertaken indicate 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" (Pilling et al. 2014a). Furthermore, the most recent stock assessment (Tremblay-Boyer et al. 2017) 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. Therefore, yellowfin tuna is considered to meet both the SG 60 and SG 80 levels of this scoring issue		
c	Harvest strategy monitoring			
	Guidepost	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	Y		
	Justification	Monitoring in place for the longline fishery for yellowfin tuna include mandatory logbooks with records of catch and effort for each fishing operation, a VMS, tagging data, biological studies and port inspections. There is, however, only very limited observer coverage of fishing operations so there are relatively few data on the discarded component of the catch, but few yellowfin would be expected to be discarded. The data that are collected do support a sophisticated stock assessment process that provides robust estimates of stock status that is sufficient to determine whether the harvest strategy is working. This meets the SG 60 requirements.		
d	Harvest strategy review			
	Guidepost			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			Not scored
	Justification	Not scored as not all SG 80 requirements are met.		
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 (or even a main retained species) of this fishery. This PI is therefore not relevant.		
f	Review of alternative measures			
	Guidepost	There has been a review of the potential effectiveness and practicality of alternative measures to	There is a regular review of the potential effectiveness and practicality of alternative measures to	There is a biannual review of the potential effectiveness and practicality of alternative

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
		minimise UoA-related mortality of unwanted catch of the target stock.	minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	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	Reported discards for the UoA represented 0.9% of the total catch for 2014 and 2015. Discarded catches of yellowfin across the whole fleet are also estimated to be minor and are ignored in the stock assessment (Tremblay-Boyer et al. 2017). The rules in place indicate that this scoring issue is not relevant to the UoA.		
References		Pilling et al. 2014, Tremblay-Boyer et al. 2017		

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER: 1 By the third, 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 management objectives reflected in the target and limit reference points.	70

Evaluation Table for PI 1.2.2 Yellowfin tuna – 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			
	Guidepost	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	Not scored
	Justification	A generally understood HCR is taken here to mean one that is not well defined, as otherwise there is no distinction between requirements at the SG 60 and SG 80 levels. This PI is also assessed taking account the guidance for scoring 'available' HCRs at SG 60 containing in SA2.5.2, SA2.5.3 and SA2.5.5. The first option for scoring 'available' HCRs is intended to cover the situation where even generally understood HCRs are not yet clearly in place for a fishery. For WCPFC fisheries, including yellowfin tuna, there are measures for controlling fishing effort through closures, limits on fishing capacity and, for vessels involved, through limits on fishing days under the VDS. There are expectations about responses and examples of how actions have been implemented for species such as bigeye tuna, but there is no clear linkage or explicit process that links changes in stock status to emergent associated management actions. Therefore we do not consider that there are even generally understood HCRs *that are also "in place"* ; and the options for 'available' HCRs are evaluated below. The second question to address, is whether there are HCRs that meet the requirements for being considered as 'available'. The guidance in SA2.5.2a indicates that teams shall accept 'available' HCRs in cases where, "…Stock biomass has not previously been reduced below the MSY level or has been maintained at that level for a recent period of time that is at least longer than 2 generation times of the species and is not predicted to be reduced below B_{MSY} within the next 5 years". As noted at PI 1.1.1 scoring issue (b), the 2017 assessment provides probabilistic estimates of parameters of interest and has been extensively explored using a crosswise grid of sensitivity tests (Tremblay-Boyer et al. 2017). The stock assessment estimates spawning biomass for yellowfin tuna, SB, to be at 46% of unfished levels ($SB_{F=0}$) and 1.58 times $SB_{MSY.}$ The stock is estimated to have never been reduced to SB_{MSY} and has hence been above SB_{MSY} in all years. According to WCPFC (2014a), paragraph 37, "Future status under *status quo* projections (assuming 2012 conditions) depends upon 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}<0.2$SB_{F=0}$) or to fall below SB_{MSY}, nor to become subject to overfishing ($F>F_{MSY}$). If recent (2002-2011) actual recruitments are assumed, spawning biomass will remain		

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place
		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}." An estimate of the generation time of yellowfin tuna using the MSC definition (Box GSA4 in CR v2.0) is not available but SPC have produced an estimate of 5 years by a different method (Berger et al. 2013) and by any method of estimation 2 generation times will be much less than the 20 years used in the projections mentioned above. The CR v2.0 SA2.5.2a condition is therefore met and HCRs are therefore considered to be 'available'. The third question to address is whether these available HCRs meet the requirement for reducing the exploitation rate as the LRP is approached. The guidance in SA2.5.3 requires that "Teams shall recognise 'available' HCRs as 'expected to reduce the exploitation rate as the point of recruitment impairment is approached' only in cases where, a. HCRs are effectively used in some other UoAs, that are under the control of the same management body and of a similar size and scale as the UoA; or b. An agreement or framework in place that requires the management body (*in this case WCPFC*) to adopt HCRs before the stock declines below Bmsy". There are CMMs that are in place for a range of tuna species within the WCPFC (including yellowfin) that contain a range of management measures that are designed to constrain fishing mortality to acceptable levels. Nevertheless, none are considered to be more highly developed than the measures currently in place for yellowfin tuna and therefore they do not offer an example of effectiveness in reducing exploitation as the PRI is approached. Option a. is therefore not considered to be met. Option b. examines plans for the introduction of an effective HCR. WCPFC Conservation and Management Measure CMM 2014-06 (WCPFC, 2014) sets out definitions of harvest strategies to be developed and implemented. The definitions include 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 Commission agreed to adopt a work plan at its 2015 annual meeting, which was revised in 2016 and 2017, with application to skipjack, bigeye, yellowfin, Pacific bluefin, and South and North Pacific albacore tunas. In fact, work towards establishing reference points and harvest control rules was progressed through the Management Objectives Workshop (MOW) process. We note that there is no specific requirement in CMM 2014-06 linking implementation of the HCRs to stock projections. Nevertheless, given that yellowfin tuna is projected to remain well above B_{MSY} for many years and that the process CMM 2014-06 describes has already been initiated – considered in place - we have considered that the requirements of Option b. SA2.5.3b are met. The requirements of the SG 60 level are therefore considered to be met. In summary, generally understood HCRs are not in place. Yellowfin is a stock that has not previously been reduced below MSY, which has always been maintained well above the TRP and has an improbably low likelihood of becoming overfished or to experience overfishing. Therefore this stock meets the requirements to be considered against "availability" requirements. In the WCPF, HCRs are not yet effectively used in any other WCPFC-managed UoAs. However, there is a framework that is in place, expected to develop further that will require the WCPFC to take action on HCRs before there is any detectable, projected risk that yellowfin stock status could decline below B_{MSY}.
	HCRs robustness to uncertainty	

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
b	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	Agreed harmonized score: SG 80 is not met. The 'available' harvest control rules are not sufficiently articulated to allow an evaluation of the extent to which they are robust to the main uncertainties. When well-defined HCRs are developed they can be evaluated as to whether this is the case. The SG80 requirements are not considered to be met.		
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.
	Met?	Y	N	Not scored
	Justification	As noted under scoring issue a above, following SA2.5.3b, we have recognised 'available' HCRs as 'expected to reduce the exploitation rate as the point of recruitment impairment is approached'. SA2.5.5b, which requires that teams shall include in their rationale 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. The agreement is contained in CMM 2014-06 whose objective is "To agree that the Commission shall develop and implement a harvest strategy approach for each of the key fisheries or stocks under the purview of the Commission according to the process set out in this conservation and management measure." This CMM contains general principles (including a description of a harvest strategy) and principles and elements of the proposed harvest strategies (which are consistent with the MSC definitions). The definitions include 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 specified timelines are 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. This workplan will be subject to review in 2017.*" Work towards establishing reference points and harvest control rules was initiated before this CMM was passed through the Management Objectives Workshop process and requires no additional trigger for their development. The requirements of SA2.5.5b are therefore considered to be met.		

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place
		Furthermore, SA2.5.6 requires that, in scoring issue (c) for "evidence" 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. The most recent stock assessment for yellowfin tuna (Tremblay-Boyer et al. 2017) and the earlier *status quo* projections (Pilling et al. 2014a) provide some evidence that the tools in use (the VDS and WCPFC effort limits) are effective in controlling exploitation of yellowfin tuna and achieving the exploitation levels that are required. As noted above, these indicate that fishing mortality for yellowfin tuna has always been below the F_{MSY} level, that the stock has not declined below B_{MSY} and that it is exceptionally unlikely (<1%) that fishing mortality will increase above the F_{MSY} level by 2032. The current levels of exploitation are therefore acceptable and the requirements of SA2.5.6 are met. This meets the requirements of the SG 60 level. The HCRs are only regarded as being 'available' in scoring issue (a) and not 'in place', so we have considered that it is not possible to score more than 60 for issue (c) since the SG 80 refers to the tools 'in use' in the fishery and not the tools 'in use or available'. In any case, not all available evidence indicates that current exploitation is adequately contained by the existing main tools (VDS and WCPFC effort limits) as catches of yellowfin (althought slightly lower in 2015) are still generally increasing and, although fishing mortality remains below the F_{MSY} level, it has increased continuously since the beginning of industrial tuna fishing. So the effectiveness of the CMM 2014-01 for restricting fishing mortality to previous levels is not well demonstrated. The requirements of the SG 80 level are therefore not clearly met.
References		Berger et al. 2013, Tremblay-Boyer et al. 2017, Pilling et al. 2014a, WCPFC (2014a), WCPFC 2014 (CMM for HCRs)

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER: 2 SI a) By the third surveillance audit, demonstrate that well defined HCRs are in place for yellowfin tuna that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY. SI b) By the third surveillance audit, provide evidence that the selection of the harvest control rules for yellowfin tuna are robust to the main uncertainties. SI c) By the third surveillance audit, provide evidence that indicates that the tools in use for yellowfin tuna are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	60

Evaluation Table for PI 1.2.3 Yellowfin – 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	N
	Justification	Stock structure - the WCPO yellowfin fishery is assessed and managed as a single stock. However, suggestive evidence for population structure is emerging for the tropical tunas (e.g. Grewe et al., 2016). Williams (2013) identified data gaps (for all key species, rather than yellowfin in particular) as follows: • Vietnamese domestic fleet: no annual catch data provided (but this now appears to be provided – see Davies et al. 2014); • Philippines and Indonesian fleets: catch data not broken down by gear type; operation (logsheet) data not provided; • Chinese Taipei fleet: no operational data, aggregated effort data or size data prior to 2004; likewise for the Japanese coastal fleet up to the present data; likewise for the Japanese pole and line fleet prior to 1972; • Several countries may have historical data which has not been identified • Historical estimates of coverage rates from logsheets and port sampling are missing in some cases; • Some key (distant water) fleets provide only aggregated rather than operation level data – this is identified as a constraint on stock assessments, and on the use of more details spatial models such as SEAPOPDYM. Overall, given the size and complexity of the fishery, the range and comprehensiveness of the data available is impressive and improving all the time. Nonetheless, these data gaps do constrain stock assessments – as does bias and lack of precision in some of the data sets, particularly historical data. Perhaps more importantly, the stock assessment continues to rely on commercial CPUE as an index of stock abundance, and although these data are carefully analysed and standardised as far as possible, there are no fishery-independent data sets with which they can be compared, while issues such as spatial and temporal changes in catchability remain problematic. On this basis, the team concluded that SG 80 is met, but SG 100 is not met.		

PI 1.2.3		Relevant information is collected to support the harvest strategy		
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
	Justification	Stock abundance and removals are monitored at a level of accuracy and coverage that is sufficient to support the harvest control measures in place. There is not, however, a high degree of certainty about all the information required. Operational level data are not provided by some WCPFC members (although some who do not provide it to WCPFC make their country's data available for assessment purposes). The issues raised above mean that we do not consider there to be a high degree of certainty about stock abundance or the robustness of the assessment to this uncertainty. . This meets the requirements for the SG 60 and SG 80 levels but not the SG 100 level.		
c	Comprehensiveness of information			
	Guidepost		There is good information on all other fishery removals from the stock.	
	Met?		Y	
	Justification	This scoring issue was the subject of particular attention in the original skipjack tuna assessment (Banks et al. 2011) and in particular whether there was good information on the level of fishery removals from some countries. The conclusion was that "despite a number of deficiencies in compilation and analysis from the Indonesia and Philippines, this reaches SG 80". According to the latest stock assessment report, there has been gradual improvement in the data from Indonesia, the Philippines and Vietnam over the last few years, and catch data are included in the most recent stock assessment. The species is also caught in the Eastern Pacific Ocean and, although this is assessed and managed as a separate stock by the Inter-American Tropcial Tuna Commission, there is good information available on these removals should a Pacific Ocean wide assessment be deemed necessary in the future. We conclude that there is now good information on all other fishery removals for yellowfin tuna. This meets the requirements of the SG 80 level.		
References		Banks et al. 2011, Tremblay-Boyer et al. 2017		

OVERALL PERFORMANCE INDICATOR SCORE:	80
CONDITION NUMBER (if relevant):	N/A

PI 1.2.3	Relevant information is collected to support the harvest strategy	
Condition		

Evaluation Table for PI 1.2.4 Yellowfin tuna – 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 most recent assessment applied to yellowfin tuna (Tremblay-Boyer et al. 2017), like other recent assessments, is an integrated, model-based assessment that is undertaken by an experienced and internationally recognised stock assessment program at the SPC. It takes into account major features relevant to the biology and the nature of the fishery. It therefore meets the requirements of the SG 80 and SG 100 levels of this scoring issue		
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	The assessment reports provide a wide range of estimates of stock status relative to indicators of interest to management including both the target and limit reference points that have been agreed for yellowfin tuna. This therefore meets the requirements of the SG 60 and SG 80 levels		
c	Uncertainty in the assessment			
	Guidepost	The assessment identifies major sources of uncertainty.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
	Met?	Y	Y	Y
	Justification	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. Two approaches were used to describe the uncertainty in key model outputs. The first estimated the statistical uncertainty within a given assessment model, while the second focused on the structural uncertainty in the assessment by considering the variation among a suite of models that encompassed combinations of alternative parameter values from 5 axes: steepness (3 settings), tagging data overdispersion (2), tag mixing (2), size		

PI 1.2.4		There is an adequate assessment of the stock status		
		data weighting (3) and regional structure (2). Greater emphasis was placed on the results of the latter approach for the formulation of management advice. This meets the requirements of the SG 60, SG 80 and SG 100 levels of this scoring issue		
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	There is an ongoing program of review of assessment assumptions and approaches by the staff in the SPC-OFP. Alternative hypotheses are continually being explored (within funding and time constraints) and assessments are updated and modified as required. Model structure has been 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 and therefore meets the requirements of this scoring issue. We note that there has been no simulation testing of the model, but such testing is not necessary to meet the requirements.		
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	Internal reviews are undertaken by SPC and there has been an external review of the assessment of Bigeye tuna (Ianelli et al. 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 latest yellowfin assessment. There have also been external reviews commissioned of different aspects of the data analyses that feed into the assessments. This is also a level of review provided by submission to the scientific committee of the WCPFC, at which experienced scientific staff from several countries attend, but we consider this to be internal to WCPFC processes. . We note, as discussed in the background, 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). A response to these reviews was provided by SPC to SC7 (SPC-OFP 2011) but there was no reference to the findings of this review or the response in the subsequent stock assessment (Davies et al. 2014). Given the manner of its initiation (it was not commissioned by the WCPFC or SPC) and the lack of a clear response in the subsequent assessment we are inclined to take a conservative approach in not considering scoring the last scoring issue to have been met		

PI 1.2.4		There is an adequate assessment of the stock status	
		at the SG 100 level. An effective external review should lead to an acknowledgment of deficiencies identified and evidence of a response in the subsequent assessment. Therefore we consider that this scoring issue is met at the SG 80 level but not at the SG 100 level.	
References		Davies et al. 2014, Haddon 2010, Ianelli et al. 2012, Maguire 2010, SPC-OFP 2011, Tremblay-Boyer et al. 2017	
OVERALL PERFORMANCE INDICATOR SCORE:			Score
CONDITION NUMBER (if relevant): Condition			95

Evaluation Table for PI 1.1.1 Albacore – 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	Agreed harmonised score: 100 (see Section 4.1) The stock assessment was updated in 2018 (Tremblay-Boyer et al. 2018) but its findings have confirmed the conclusions of previous assessments: that there is no evidence of any impairment to recruitment for south Pacific albacore and no trend over time (Figure 21). All models indicated that South Pacific albacore was above the limit reference point (of 0.2SBF=0), with overall median depletion for 2016 (SBlatest/SBF=0) estimated at 0.52 (80 percentile range 0.37-0.69). An analysis using SS3, presented to SC12 (Cao et al., 2016) confirmed the conclusions of the SPC assessment and estimated SB at ~55% of SB_0. Although confidence intervals that match the MSC definition of a high degree of certainty (the 95th percentile) were not available, the lower 90th percentile (0.37) is so far above the PRI that it is clear that this threshold is met. The stock continues to meet the requirements of the SG 60, SG 80 and SG 100 levels.		
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	Y
	Justification	Agreed harmonised score: 100 The updated assessment (Tremblay-Boyer et al 2018) has provided estimates of spawning biomass relative to MSY for recent and latest years (Figure 19) and also as Kobe plots		

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
	showing this over the history of the fishery (Figure 22). SB_{MSY} was estimated to be at 0.15 $SB_{F=0}$ with the lower 10 percentile estimated to be 1.96 times this level. Although confidence intervals that match the MSC definition of a high degree of certainty (the 95th percentile) were not available, the lower 90th percentile is so far above the PRI that it is clear that this threshold is met. These showed that there continues to be a high degree of certainty that the stock has always been above a level that is consistent with MSY. The stock continues to meet the requirements of the SG 80 and SG 100 levels.		
References	Tremblay-Boyer et al. 2018		
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)	Level of spawning biomass in the absence of fishing ($SB_{F=0}$) LRP: 20% $SB_{F=0}$	$SB_{F=0}$ = 443,794 t 0.2X $SB_{F=0}$ = 93,801 t	$SB_{latest}/SB_{F=0}$ = 0.53 (> LRP) $SB_{recent}/SB_{F=0}$ = 0.51 (> LRP)
Reference point used in scoring stock relative to MSY (SIb)	Level of spawning biomass in the absence of fishing ($SB_{F=0}$) Interim TRP: 56% $SB_{F=0}$ Level of spawning biomass relative to MSY (SB_{MSY})	$SB_{F=0}$ = 443,794 t 0.56 X$SB_{F=0}$=242,642 t SB_{MSY}= 71,407 t	$SB_{latest}/SB_{F=0}$ = 0.53 (< Interim TRP) $SB_{recent}/SB_{F=0}$ = 0.51 (< Interim TRP) SB_{latest}/SB_{MSY} = 4 (>> SB_{MSY}) SB_{recent}/SB_{MSY} = 3.88 (>> SB_{MSY})
OVERALL PERFORMANCE INDICATOR SCORE:			Score
CONDITION NUMBER (if relevant): Condition			100

Evaluation Table for PI 1.1.2 Albacore – 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	Not scored- Stock does not require rebuilding		
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 evidence that the rebuilding strategies are rebuilding stocks, or it is likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild 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	Not scored
	Justification	Not scored- Stock does not require rebuilding		
References				
OVERALL PERFORMANCE INDICATOR SCORE:				Score
CONDITION NUMBER (if relevant): Condition				N/A

Evaluation Table for PI 1.2.1 Albacore – 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			
	Guidepost	The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG 80.	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 SG 80.	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 SG 80.
	Met?	Y	N	N
	Justification	Agreed harmonized score: 60 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 – MSCI Vocabulary v1.1). WCPFC adopted a process for developing a formal harvest strategy for each of its key stocks, including South Pacific albacore, in CMM 2014-06, which has an associated workplan. The harvest strategy for South Pacific albacore has several contributing components: ▪ Data collection on the stock and fishery (described in Section 3.3.2 and evaluated under PI 1.2.3 below) ▪ Stock assessment process (described in Section 3.3.2 and evaluated under PI 1.2.4 below) ▪ A limit reference point (explicit) and an interim target reference point (see PI 1.1.1 above) Measures to control the fishery at WCPFC, PNA and Solomon Islands national levels that are in place (such as CMM 2018-01) or 'available' are described in Section 3.3.2 and these are evaluated below under PI 1.2.2. Implementation of CMM 2015-02 is monitored via data gathering and Part 2 reports to the Commission. These components of a harvest strategy as applied to south Pacific albacore are expected to achieve stock conservation management objectives meeting the requirements of the SG 60 level. There are, however, no formal harvest control rules. This absence of agreed harvest control rules within WCPFC for any other tuna species, and the record of the Commission failing to reduce fishing mortality on bigeye tuna when it was thought to have been subject to overfishing, 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.		

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
		It is also not clear that coherent management actions are implemented throughout the range of the stock, particularly in Indonesia and the Philippines. Overall this prevents the conclusion that the strategy is designed to achieve stock management objectives. The harvest strategy for south Pacific albacore is therefore considered to meet the SG 60 level of this scoring issue but not the SG 80 or SG 100 levels.		
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	Agreed harmonized score 80 As described under PI 1.1.1 above, albacore remain classified as not overfished nor subject to overfishing. The stock is about half of unfished levels and only slightly below the newly agreed TRP which is evidence that the strategy is achieving its objectives. The harvest strategy, however, remains incompletely specified and has not fully been fully evaluated. This meets the requirements of the SG 60 and SG 80 levels but not of the SG 100 level.		
c	Harvest strategy monitoring			
	Guidepost	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	Y		
	Justification	Agreed harmonized score 60 Monitoring in place for the longline fishery for albacore tuna include mandatory logbooks with records of catch and effort for each fishing operation, a VMS, tagging data, biological studies and port inspections. There is, however, only very limited observer coverage of fishing operations so there are relatively few data on the discarded component of the catch, but few albacore would be expected to be discarded (Tremblay-Boyer et al. 2018). The data that are collected support a sophisticated stock assessment process that provides robust estimates of stock status that is sufficient to determine whether the harvest strategy is working. This meets the requirements of the SG 60 level.		
d	Harvest strategy review			
	Guidepost			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			Not scored
	Justification	Not scored because not all SG 80 requirements are met		

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
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 (or even a main retained species) of this fishery. This PI is therefore not relevant.		
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 biannual 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	Reported discards of albacore for the UoA represented <4% of the retained catch for 2014 - 2016. Discarded catches of albacore across the whole fleet are also likely tobe minor and are ignored in the stock assessment (Tremblay-Boyer et al. 2018). The rules in place indicate that this scoring issue is not relevant to the UoA.		
References		Tremblay-Boyer et al. 2018		

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER: 3 By the third surveillance audit, demonstrate that the harvest strategy for albacore tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points.	70

Evaluation Table for PI 1.2.2 Albacore – 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			
	Guidepost	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	
	Justification	Agreed harmonized score: 60 A generally understood HCR is taken here to mean one that is not well defined, as otherwise there is no distinction between requirements at the SG 60 and SG 80 levels. This PI is also assessed taking account the guidance for scoring 'available' HCRs at SG 60 containing in SA2.5.2, SA2.5.3 and SA2.5.5. The first option for scoring 'available' HCRs is intended to cover the situation where even generally understood HCRs are not yet clearly in place for a fishery. For WCPFC fisheries, including albacore tuna, there are measures for controlling fishing effort through closures, limits on fishing capacity and, for vessels involved, through limits on fishing days under the LL VDS. There are expectations about responses and examples of how actions have been implemented for species such as bigeye tuna, but there is no clear linkage or explicit process that links changes in stock status to emergent associated management actions. Therefore we do not consider that there are even generally understood HCRs *that are also "in place"*; and the options for 'available' HCRs are evaluated below. MSC CR v2.0 lays out two conditions for acceptance of HCR being available sufficient to justify scoring at the SG60 level. First, CR v2.0 SA2.5.2a provides for HCR being recognized as available "...Stock biomass has not previously been reduced below the MSY level or has been maintained at that level for a recent period of time that is at least longer than 2 generation times of the species, and is not predicted to be reduced below B_{MSY} within the next 5 years". As noted at PI 1.1.1(c), The MULTIFAN-CL assessment provides probabilistic estimates of parameters of interest, and has been extensively explored through sensitivity tests (Tremblay-Boyer et al. 2018). The stock assessment estimates spawning stock biomass to be well above SB_{MSY} (see PI 1.1.1 above). The stock is estimated never to have reduced to SB_{MSY} and has hence been above SB_{MSY} in all years. Stock projections reported in WCPFC-SC (2017) (Figure 23) indicated that, under 2015 effort levels, the stock was predicted to decline but only gradually and would not fall below B_{MSY} levels within 5 years. The CR v2.0 SA2.5.2a condition is therefore met.		

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
		Second, CR v2.0 SA2.5.3 requires that "Teams shall recognise 'available' HCRs as 'expected to reduce the exploitation rate as the point of recruitment impairment is approached' only in cases where, a. HCRs are effectively used in some other UoAs, that are under the control of the same management body and of a similar size and scale as the UoA; or b. An agreement or framework in place that requires the management body (*in this case WCPFC*) to adopt HCRs before the stock declines below Bmsy". There are CMMs that are in place for a range of tuna species within the WCPFC (including albacore) that contain a range of management measures that are designed to constrain fishing mortality to acceptable levels. Nevertheless, none are considered to offer an example of effectiveness in reducing exploitation as the PRI is approached. Option a. is therefore not considered to be met. Option b. examines plans for the introduction of an effective HCR. WCPFC CMM 2014-06 sets out definitions of harvest strategies to be developed and implemented. The definitions include 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 Commission agreed to adopt a work plan at the 2015 Commission meeting, with later revisions in subsequent years, with application to skipjack, bigeye, yellowfin, Pacific Bluefin, and South and North Pacific albacore tunas. In fact, work towards establishing reference points and harvest control rules has been initiated through the Management Objectives Workshop (MOW) process (Pilling et al. 2015). We note that there is no specific requirement in CMM 2014-06 linking implementation of the HCRs to stock projections. Nevertheless, given that albacore tuna are projected to remain well above B_{MSY} for many years and that the process CMM 2014-06 describes has already been initiated – considered in place - we have considered that the requirements of Option b. SA2.5.3b are met. The requirements of the SG 60 level are therefore considered to be met. In summary, generally understood HCRs are not in place. Albacore is a stock that has not previously been reduced below MSY, which has always been maintained well above the TRP and has an improbably low likelihood of becoming overfished or to experience overfishing. Therefore this stock meets the requirements to be considered against "availability" requirements. In the WCPF, HCRSs are not yet effectively used in any other WCPFC-managed UoAs. However, there is a framework that is in place, expected to develop further that will require the WCPFC to take action on HCRs before there is any detectable, projected risk that albacore stock status could decline below B_{MSY}.		
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

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
	Justification	Agreed harmonized score: SG 80 is not met. The 'available' harvest control rules are not sufficiently articulated to allow an evaluation of the extent to which they are robust to the main uncertainties. When well-defined HCRs are developed they can be evaluated as to whether this is the case. The SG80 requirements are not considered to be met.		
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.
	Met?	Y	N	Not scored
	Justification	Agreed harmonized score: 60 As noted under scoring issue a above, following SA2.5.3b, we have recognised 'available' HCRs as 'expected to reduce the exploitation rate as the point of recruitment impairment is approached'. SA2.5.5b, which requires that teams shall include in their rationale 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. The agreement is contained in CMM 2014-06 whose objective is "To agree that the Commission shall develop and implement a harvest strategy approach for each of the key fisheries or stocks under the purview of the Commission according to the process set out in this conservation and management measure." This CMM contains general principles (including a description of a harvest strategy) and principles and elements of the proposed harvest strategies (which are consistent with the MSC definitions). The definitions include 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 specified timelines are 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. This workplan will be subject to review in 2017." Work towards establishing reference points and harvest control rules was initiated before this CMM was passed through the Management Objectives Workshop process and requires no additional trigger for their development. The requirements of SA2.5.5b are therefore considered to be met. Furthermore, SA2.5.6 requires that, in scoring issue (c) for "evidence" 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. The most recent stock assessment for albacore tuna (Tremblay-Boyer et al. 2018) and stock status projections (Figure 21) provide some evidence that the tools in use are effective in controlling exploitation of albacore tuna and achieving the exploitation levels		

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place
		that are required. As noted above, these indicate that fishing mortality has always been below the F_{MSY} level, that the stock has not declined below B_{MSY} and that it is exceptionally unlikely (<1%) that fishing mortality will increase above the F_{MSY} level by 2032. The current levels of exploitation are therefore acceptable and the requirements of SA2.5.6 are met. This meets the requirements of the SG 60 level. The HCRs are only regarded as being 'available' in scoring issue (a) and not 'in place', so we have considered that it is not possible to score more than 60 for issue (c) since the SG 80 refers to the tools 'in use' in the fishery and not the tools 'in use or available'. The requirements of the SG 80 level are therefore not clearly met
References		Tremblay-Boyer et al. 2018

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER: 4 SI a) By the third surveillance audit, demonstrate that well defined HCRs are in place for albacore tuna that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY. SI b) By the third surveillance audit, provide evidence that the selection of the harvest control rules for albacore tuna are robust to the main uncertainties. SI c) By the third surveillance audit, provide evidence that indicates that the tools in use for albacore tuna are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	60

Evaluation Table for PI 1.2.3 Albacore – 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	N
	Justification	Agreed harmonized score: 80 The south Pacific albacore stock has been monitored through the assessment work of the Secretariat of the Pacific Community (SPC). The range of data available for albacore is described in the background section (Section 3.3.2) and includes information on stock structure, stock productivity, fleet composition, and other data such as the results of tagging. There remain some important data gaps, however, as identified by Williams (2018 – and previous versions of this annual report). For UoA vessels, a key data gap comes from the low level of observer coverage, which limits the information available on the non-retained component of the catch. Overall, given the size and complexity of the fishery, the range and comprehensiveness of the data available is impressive and improving all the time. Nonetheless, these data gaps do constrain stock assessments – as does bias and lack of precision in some of the data sets, particularly historical data. Perhaps more importantly, the albacore stock assessment continues to rely on commercial CPUE as an index of stock abundance, and although these data are carefully analysed and standardised as far as possible, there are no fishery-independent data sets with which they can be compared, while issues such as spatial and temporal changes in catchability remain problematic. On this basis, the team concluded that SG 80 is met, but SG 100 is not met.		
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	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

PI 1.2.3		Relevant information is collected to support the harvest strategy		
			support the harvest control rule.	and management to this uncertainty.
	Met?	Y	Y	N
	Justification	Agreed harmonized score: 80 Standardized abundance indices are regularly monitored by the ALBWG. The ALBWG aggregated catch and effort data into monthly 10x10 strata for the surface fishery, and 50x50 strata for the longline for standardization using generalized linear models. Internationally systems are in place for recording catch and effort for all fishing entities fishing on north Pacific albacore. CCMs are required to annually report the following data for fishery monitoring: total annual catch (round weight by species) total annual effort (active vessels by fishery); catch-effort (summary of logbook data); biological data, (size composition, length or weight frequencies, sex information). Removals of retained species are monitored annually through the Solomon Islands port inspections and logbooks. There are several information related uncertainties with the assessment. Tremblay-Boyer et al. (2018) state that the main underlying source of difficulty concerns the basic structure of the fishery: exploitation is focused on the oldest segment of the population that are growing slowly or have have essentially ceased growing. This means that there is relatively little information in the model to inform on recruitment variability and the information in the data to support estimation of absolute population size is weak. There is also some conflict between some of the data sources available for the assessment including conflicts between the length-frequency data and CPUE series, and between troll length frequency samples and the age-length data. Growth was also a major uncertainty with an unresolved inconsistency in the growth rates indicated by the VB curve fitted to the age-at-length data and presumed annual modes in the size composition data for some gears. Therefore the fishery does not meet the SG100.		
c	Comprehensiveness of information			
	Guidepost		There is good information on all other fishery removals from the stock.	
	Met?		Y	
	Justification	Agreed harmonized score: 80 All fishery removals are considered in the south Pacific albacore stock assessment. No data gaps have been identified in the stock assessment. . Overall there is adequate information on all other fishery removals from the stock.		
References				

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant):	80

Evaluation Table for PI 1.2.4 Albacore – 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	N
	Justification	Agreed harmonized score: 80 The assessment for south Pacific albacore tuna is described in the background (Section 3.3.2). Like previous assessments, it is an integrated, model-based assessment that is undertaken by an experienced and internationally recognised stock assessment program at the SPC. It is appropriate for the stock. However, one 'major feature' relevant to the biology of the species and the nature of the UoA that is not taken into account in the present stock assessment is the fishery removals from this stock in the Eastern Pacific Ocean (EPO). While these are small relative to the catches in the WCPO, the IATTC has indicated that the assessment would benefit from their inclusion. Therefore, the SG100 is not met and we have raised a recommendation associated with this concern. The IATTC is planning to do a collaborative benchmark assessment with SPC in 2022 wherein the EPO catches will be included (IATTC 2018). The requirements of the SG80 are met but not the SG100 on the basis of not including the EPO catches as an input to the stock assessment. This is slightly out of agreement with the outcome of the MSC harmonization meeting (Hong Kong 21-22 April 2016), however the difference is not material.		
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	Agreed harmonized score: 80 As described in the background (Section 3.3.2) the assessment estimates stock status of south Pacific albacore stock status relative to a range of reference points (Table 7). This meets the requirements of the SG 80 level.		
c	Uncertainty in the assessment			
	Guidepost	The assessment identifies major sources of uncertainty.	The assessment takes uncertainty into account.	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.
	Met?	Y	Y	Y

PI 1.2.4		There is an adequate assessment of the stock status		
	Justification	Agreed harmonized score: 100 As described in the background (Section 3.3.2) the assessment of albacore 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. This meets the requirements of the SG 60, SG 80 and SG 100 levels of this scoring issue		
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	Agreed harmonized score: 100 There is an ongoing program of review of assessment assumptions and approaches by the staff in the SPC-OFP. Alternative hypotheses are continually being explored (within funding and time constraints) and assessments are updated and modified as required. Model structure has been 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 Tremblay-Boyer et al. (2018) conducted extensive sensitivity analyses to evaluate alternative assumptions on the assessment results. Several hundred model runs were undertaken. Information was presented on the bounds of plausible model sensitivity to biological assumptions (natural mortality, steepness) and sensitivity to data inputs (alternative CPUE indices, length data weighting). The assessment has been tested using a systematic exploration of the interactions among different sets of assumptions. This confirms that alternative hypothesis and assessment approaches have been rigorously explored.		
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	Agreed harmonized score: 80 Internal reviews are undertaken by SPC and there has been an external review of the assessment of Bigeye tuna (Ianelli et al. 2012) which provided recommendations that were also applicable to other similar assessments such as for albacore tuna. Many of those recommendations have been addressed with the latest yellowfin assessment. There have also been external reviews commissioned of different aspects of the data analyses that feed into the assessments.		

PI 1.2.4		There is an adequate assessment of the stock status	
		This is also a level of review provided by submission to the scientific committee of the WCPFC, at which experienced scientific staff from several countries attend, but we consider this to be internal to WCPFC processes. This meets the SG 80 requirements but not those of the SG 100 level.	
References			
OVERALL PERFORMANCE INDICATOR SCORE:			Score
CONDITION NUMBER (if relevant): Condition			85

Principle 2

Scores for Albacore and Yellowfin tuna would be the same for P2 Performance Indicators.

Evaluation Table for 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	Main primary species are likely to be above the PRI OR 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.	Main primary species are highly likely to be above the PRI OR 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.	There is a high degree of certainty that main primary species are above the PRI and are fluctuating around a level consistent with MSY.
	Met?	Y	Y	Y
	Justification	Bigeye tuna is the only main primary species. Bigeye accounted for an average of 6% of the total catch (target, retained, discarded, and bait). Bigeye tuna had previously been assessed as being close to the limit reference point but, as described in the P2 background section, the most recent stock assessments have estimated the stock to be in a healthier condition (Table 13, Figure 26) and to be neither overfished nor subject to overfishing (WCPFC-SC 2018). Based on scenarios that only include the latest estimates of growth, the WCPFC-SC considered that the stock was not experiencing overfishing (94% probability $F<F_{MSY}$) and it was not in an overfished condition (0% probability $SB/SB_{F=0}<LRP$). The lower 10 percentiles for the ratios SB_{latest}/SB_{MSY} and SB_{recent}/SB_{MSY} were 1.306 and 1.117 respectivley, indicating a less than 10% proability that the stock has been depleted to below SB_{MSY}. There is now a high degree of certainty that bigeye tuna is above the PRI and has always been above MSY. GSA3.1.8 requires that, in assessing the impact of a UoA on P2 species, this should include both observed and unobserved fishing mortality, where unobserved mortality may include that resulting from lost fishing gear that continues to fish. There may be a low level of unobserved mortality of bigeye tuna as a result of lost fishing gear. The client has indicated that gear loss in the UoA has been minimal but the number of terminal tackle or branchlines that are lost per set/trip/year per vessel are not recorded. Any lost pelagic longline gear is only likely to capture fish while the bait remains on the hook and the mortality rate from lost longlines is usually low (Macfadyen et al. 2009). Observers are required to report whether the vessel abandoned, lost or discarded any fishing gear,		

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.		
		whether the vessel found abandoned gear from another vessel, and whether the vessel failed to report any lost or abandoned gear if required by the country in which waters the vessel was fishing (Gilman, 2015). The low level of observer coverage for the UoA means that observers are unlikely to provide good information on these matters. Nevertheless, any such mortality should be reflected in the stock abundance indicators used in the integrated stock assessment and should not cause any bias in the assessed status. The potential for some level of unobserved mortality does not therefore diminish the level of confidence in the assessed stock status. This meets the requirements of the SG 60, SG 80 and SG 100 levels.		
b	Minor primary species stock status			
	Guidepost			For minor species that are below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species
	Met?			Y
	Justification	The two minor primary species are skipjack tuna and Pacific bluefin tuna. Skipjack tuna are not overfished or subject to overfishing (WCPFC-SC 2018) and so are not below the PRI and do not require rebuilding. Pacific bluefin tuna are considered overfished with the most recent estimate of spawning biomass (2016) being 3.3% $SSB_{F=0}$ (WCPFC-SC 2018). The catch by the UoA, however, is inconsequential: it has been zero in most recent years and was 2 t in 2016. Therefore, the UoA does not hinder the recovery and rebuilding of Pacific bluefin tuna. This meets the requirements of the SG 100 level.		
References		WCPFC-SC 2018		
OVERALL PERFORMANCE INDICATOR SCORE:				Score
CONDITION NUMBER (if relevant):				100

PI 2.1.1 Scoring Calculation

UoA	Element	SI a	SI b	Element score	PI score
All	Bigeye tuna	100	N/A	100	100
	Skipjack tuna	N/A	100	100	
	Pacific bluefin tuna	N/A	100	100	

Evaluation Table for 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			
	Guidepost	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 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?	BET - Y	BET - Y	BET, SKJ, PBF - Y
	Justification	Main primary species - Bigeye tuna: The key measures that contribute to the strategy for bigeye include the CMM (CMM 2018-01), the limits on the number of longline vessels that fish in the Solomon Islands EEZ, the license conditions that apply to them, and the stock assessments and the data collection systems that support them. The most recent stock assessment indicates this strategy has been effective for maintaining stocks above the point where recruitment would be impaired. These are considered to constitute a strategy that has been highly likely to maintain bigeye above PRI. This would meet SG 60, SG 80 and SG 100 levels. Minor primary species - Skipjack tuna: There is a strategy for managing skipjack tuna in the form of the series of WCPFC CMMs for the key tuna species. As for bigeye tuna, there are also the limits on the number of longline vessels that fish in the Solomon Islands EEZ, the license conditions that apply to them, and the stock assessments and the data collection systems that support them. This has maintained its status above PRI. (McKechnie et al. 2016a and 2016b). This meets the requirements of the SG 100 level. Minor primary species - Pacific bluefin tuna: Pacific bluefin tuna have become overfished in the Pacific Ocean and their recovery is dependent of effective management by both the WCPFC and the IATTC because the stock is found in both the eastern and western Pacific Ocean. The IATTC has adopted a resolution for the management of the species (IATTTC C-16-8). The WCPF has also adopted a CMM for Pacific bluefin (CMM 2017-08) and also a harvest strategy (CMM 2017-02) including the provision that and the Northern Committee shall periodically review and recommend revisions to this measure as needed to implement the Harvest Strategy. These are regarded as a strategy for managing this species although their recovery is yet to be demonstrated. This meets the SG 100 level. Both the main and minor primary species meet the SG 100 level.		
b	Management strategy evaluation			
	Guidepost	The measures are considered likely to work,	There is some objective basis for confidence that the	Testing supports high confidence that the partial

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.		
		based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	measures/partial strategy will work, based on some information directly about the fishery and/or species involved.	strategy/strategy will work, based on information directly about the fishery and/or species involved.
	Met?	BET, SKJ, PBF – Y	BET, SKJ, PBF – Y	BET, SKJ – Y; PBF - N
	Justification	Main primary species - Bigeye tuna: The latest stock assessment for bigeye (Vincent et al. 2018) has confirmed that bigeye tuna is above the PRI and has always been above MSY. Therefore, it is considered that testing (i.e., collection of detailed catch data, stock assessments and analysis of the impact of different fisheries on stocks of bigeye tuna, showing that the longline fishery has not caused overfishing) supports high confidence that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved. This meets the SG 100 requirements. Minor primary species - Skipjack tuna: The latest stock assessment for skipjack (McKechnie et al. 2016a) has confirmed the healthy status of the stocks of skipjack tuna, and the low level of impact of the longline fishing on skipjack. Therefore, it is considered that testing (i.e., collection of detailed catch data, stock assessments and analysis of the impact of different fisheries on stocks of skipjack tuna) supports high confidence that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved. This meets the SG 100 requirements. Minor primary species - Pacific bluefin tuna: The latest stock assessment for Pacific bluefin tuna indicated that the stock remains overfished (WCPFC-SC 2018). The SSB had steadily declined from 1996 to 2010; a slow increase of the stock had continued since 2011 including for the most recent two years (2015-2016), but the stock was estimated to be at 3.3% of unfished levels at this time. The increase in spawning stock size estimated for the most recent years does provide some objective basis for confidence that the strategy for the stock as a whole could work, but the reported uncertainty about likely future recruitment levels and current status do not allow much confidence yet that this strategy will work. For this UoA, however, the strategy in place also includes the important additional consideration that fishing by longlines in Solomon Islands waters is inherently unlikely to ever catch more than trivial quantities of Pacific bluefin tuna because of the habitat preferences of this species. There is an objective basis for confidence about the strategy that applies to the UoA, but, given the uncertainties about the strategy that applies across the whole range of the stock we do not consider there to be high confidence that the strategy will work for the stock as a whole. Thus SG 60 and SG 80 are considered to be met but not SG 100.		
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

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.		
				its overall objective as set out in scoring issue (a).
	Met?		BET, SKJ, PBF – Y	BET, SKJ – Y; PBF - N
	Justification	Main primary species - Bigeye tuna: The combination of ongoing monitoring programs, stock assessments, and successive refinements to CMMs all provide evidence that the strategy bigeye tuna has been effectively implemented and is achieving the objective of preventing the stock from becoming overfished. This meets the SG 80 and SG 100 requirements. Minor primary species - Skipjack tuna: The combination of ongoing monitoring programs, stock assessments, and successive refinements to CMMs all provide evidence that the strategy skipjack tuna has been effectively implemented and is achieving the objective of preventing the stock from becoming overfished. This meets the SG 80 and SG 100 requirements. Minor primary species - Pacific bluefin tuna: The estimated recent increase in spawning biomass for Pacific bluefin tuna provides some evidence that the strategy for this species has been successfully implemented. The very low levels of catch by the UoA is also clear evidence that the restriction of fishing by UoA vessels to longlines in Solomon Islands' waters keeps the UoA away from the waters inhabited by Pacific bluefin. Nevertheless, the uncertainties associated with the assessment, and the continued very low level of spawning stock biomass, , mean that the recent increase in stock size is not considered to be clear evidence of a successfully implemented strategy for the whole stock. The SG 80 level is therefore considered to be met but not the SG 100 level.		
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?	Not relevant	Not relevant	Not relevant
	Justification	Not scored; no Primary species are sharks.		
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?	Not relevant	Not relevant	Not relevant
	Justification	There are no unwanted catches of primary species, as indicated by the very low levels of discarding recorded.		

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.	
References	McKechnie et al. 2016a 2016b, WCPFC-SC 2018	
OVERALL PERFORMANCE INDICATOR SCORE:		Score
CONDITION NUMBER (if relevant): Condition		95

PI 2.1.2 Scoring Calculation

UoA	Element	SI a	SI b	SI c	SI d	SI e	Element score	PI score
All	Bigeye tuna	100	100	100	N/A	N/A	100	95
	Skipjack tuna	100	100	100	N/A	N/A	100	
	Pacific bluefin tuna	100	80	80	N/A	N/A	85	

Evaluation Table for 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 species			
	Guidepost	Qualitative information is adequate to estimate the impact of the UoA on the main primary species with respect to status. OR 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.	Some quantitative information is available and is adequate to assess the impact of the UoA on the main primary species with respect to status. OR If RBF is used to score PI 2.1.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptiblity attributes for main primary species.	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.
	Met?	BET – Y	BET – Y	BET – Y
	Justification	Bigeye tuna is the only main primary species. This is a high value species for which almost all the catch is retained (Table 10). The information available on the impact of the UoA is provided mainly by the logbook records which are able to be verified by the mandatory inspections in port of the catch at the end of every trip. The information collected therefore represents a census of the total catch, and is precise, comprehensive and unbiased. The catch information is also supported by a range of other types of data on the fishery and the biology of the species as described in the background including size and age composition and movement from tagging. This provides quantitative information which is incorporated into the WCPFC's assessment of stock status. This information provides a high degree of certainty that the UoA has little impact on the stock as a whole. Based on the latest stock assessment (Vincent et al. 2018), the WCPFC-SC (2018) concluded that the stock was not overfished or subject to overfishing. This meets the requirements of the SG 60, SG 80 and SG 100 levels.		
B	Information adequacy for assessment of impact on minor species			
	Guidepost			Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.
	Met?			SKJ, PBF - Y
	Justification	The minor primary species are skipjack tuna and Pacific bluefin tuna. The information available on the impact of the UoA on these species is provided mainly by the logbook records which are able to be verified by the mandatory inspections in port of the catch at the end of every trip. Almost all the catch of these species is retained. The information collected therefore represents almost a total census of the total catch, and is precise, comprehensive and unbiased. The catch information is also supported by a range of other		

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		
		types of data on the fishery and the biology of the species as described in the assessment documents for skipjack (McKechnie et al. 2016a, 2016b) and Pacific bluefin tuna (Pacific Bluefin Tuna Working Group 2018) including size and age composition and movement from tagging This provides quantitative information which is incorporated into the WCPFC's assessments of stock status. This information provides a high degree of certainty that the UoA has little impact on the stock as a whole. This meets the requirements of the SG 100 level.		
C	Information adequacy for management strategy			
	Guidepost	Information is adequate to support measures to manage main primary species.	Information is adequate to support a partial strategy to manage main Primary species.	Information is adequate to support a strategy to manage all primary species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	Met?	BET, SKJ, PBF – Y	BET, SKJ, PBF – Y	BET, SKJ, PBF – Y
	Justification	The strategies to manage the primary species (bigeye, skipjack and Pacific bluefin tuna) are all based mainly on WCPFC CMMs. These are supported by the comprehensive range of information that is used to update summary statistics for the fishery and integrated stock assessments that are the provide important information on the status of stocks and whether management objectives are being achieved. For Pacific bluefin the strategy also includes the IATTC component to the species' management. For each species there are also additional fishery-specific aspects to the strategies that include restrictions on the numbers of fishing vessels with permits to operate in the Solomon Islands EEZ and the range of license conditions that apply. Furthermore, the fishing methods and locations employed by the fishery mean that they comprise a small component of the total catch of each species across their range. This data collection is ongoing, so it would readily detect any change in the risk posed by the UoA to all primary species.		
References		Vincent et al. 2018; WCPFC-SC 2018; Pacific Bluefin Tuna Working Group 2018		

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): Condition	100

PI 2.1.3 Scoring Calculation

UoA	Element	SI a	SI b	SI c	Element score	PI score
All	Bigeye tuna	100	N/A	100	100	100
	Skipjack tuna	N/A	100	100	100	
	Pacific bluefin tuna	N/A	100	100	100	

Evaluation Table for PI 2.2.1 – Secondary species outcome

PI 2.2.1		The UoA aims to maintain secondary species above a biological 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	Main Secondary species are likely to be within biologically based limits. OR If below biologically based limits, there are measures in place expected to ensure that the UoA does not hinder recovery and rebuilding.	Main secondary species are highly likely to be above biologically based limits OR 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. AND 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.	There is a high degree of certainty that main secondary species are within biologically based limits.
	Met?	Y	N	
	Justification	There are no main secondary species other than the bait used in the fishery (see Table 10, Table 11, Table 12). Main secondary - Bait As outlined in Section 3.4.5 the fishery is thought to use mainly Goldstripe sardinella as bait, which in 2016 and 2017 accounted for approximately 30% of the average total catch (including landings, discards and bait). Several stock assessments have been conducted for the species in regions throughout its range (Sanders and Kedidi, 1984; Bennett et al., 1992). No species-specific management measures exist for this species (Hoare, 2016). In 2016, 186,980 t were caught worldwide, with the largest catches coming from Indonesia (FAO, 2018). While the client reported that the bait is sourced from China, the country of origin of the bait catch is unknown. The species is considered to be among the most abundant and widespread marine pelagic species (Thomas et al. 2014). The client reported that several other species may be used as bait, but the species quantities and composition are unknown. Assuming that all bait used is exclusively		

PI 2.2.1		The UoA aims to maintain secondary species above a biological based limit and does not hinder recovery of secondary species if they are below a biological based limit.		
		Goldstripe sardinella, the quantity of bait used by the UoA (400-800t) represents an inconsequential proportion of the total catch (<1%), given that the total annual catches of Goldstripe sardinella are above 150,000 t (FAO, 2018). Therefore, given the small proportion of the catch used by the UoA, continued use of Goldstripe sardinella as a bait species would not be a threat to the sustainability or hinder recovery and rebuilding should that be required. The measures in place that are expected to ensure this are those that restrict the scale of this fishery to a limited number of vessels so that their bait use would remain a small proportion of the total catch of any bait species and less than levels that could hinder recovery and rebuilding. However, given the uncertainty around the species involved, their source fisheries, and the status of the stocks targeted by these fisheries, we do not consider such a conclusion to be highly likely. We therefore do not consider the SG 80 requirements to be met for bait. GSA3.1.8 requires that, in assessing the impact of a UoA on Principle 2 species, this should include both observed and unobserved fishing mortality, where unobserved mortality may include IUU fishing, animals that may die after encountering fishing gear that may not be recorded and mortality that may result from lost fishing gear that continues to fish (ghost fishing). We are unable to assess the likely level of unobserved mortality for the source fishery for bait, except that we would in principle consider that ghost fishing would be minimal for purse seine gear that is usually used to capture small pelagic species.		
b	Minor secondary species stock status			
	Guidepost			Minor secondary species are highly likely to be above biologically based limits. OR For minor species that are below biologically based limits', there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species
	Met?			Not scored
	Justification	Not scored because SG 80 requirements for scoring issue a are not met.		
References		www.fishsource.org.; Sanders and Kedidi, 1984; Bennett et al., 1992; Hoare, 2016; FAO, 2018. Thomas et al. 2014.		

OVERALL PERFORMANCE INDICATOR SCORE:	Score
Condition #5 By the fourth surveillance, the audit provides evidence that bait species classified as main secondary used in the fishery are highly likely to be above biologically based limits.	60

PI 2.2.1	The UoA aims to maintain secondary species above a biological 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 either evidence of recovery or a demonstrably effective partial strategy in place such that the UoA does not hinder recovery and rebuilding.	

Evaluation Table for 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			
	Guidepost	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	N	
	Justification	There are no main secondary species other than the bait used in the fishery (see Section 3.4.3). Main secondary - Bait For the UoA, the number of vessels in the fishery are limited, the quantity of bait used is monitored and, as noted under PI 2.2.1 above, this amount represents a small proportion of the total catch from the likely source of this bait. These are considered to be measures that are in place that would be expected to ensure that the UoA has minimal impact on the source of the bait. These are expected to work similarly for all potential bait species but this expectation would be re-evaluated as additional information on the composition of the bait becomes available. We are not able to comment on the measures that are in place for the presumed bait fishery itself. The uncertainty over the source of bait, and the management of the presumed bait fishery, means that we do not have sufficient evidence to demonstrate that there is even a partial strategy in place that would be expected to maintain the bait species at a level which is highly likely to be within biologically-based limits. Furthermore, information on the species of bait and their source fisheries is needed before it can be determined whether a partial strategy is necessary. In the absence of such information, we must assume that a partial strategy at least would be necessary. This meets the requirements of the SG 60 level but not of the SG 80 level.		
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/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.

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.		
	Met?	Y	Y	Not scored
	Justification	Main secondary - Bait The measures described under scoring issue a (i.e. low portion of bait use in UoA compared to total catch), are information that is directly about the UoA fishery (though not about the bait fishery itself) and provide some objective basis for confidences that they would work and ensure that the UoA has minimal impact on the source of the bait. This meets the requirements of the SG 60 and SG 80 levels.		
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 objective as set out in scoring issue (a).
	Met?		Y	Not scored
	Justification	Main secondary - Bait The information provided about bait usage and UoA effort levels, contrasted to the total commercial catch of Goldstripe sardinella constitute some evidence that the measures have been implemented successfully. This meets the requirements of the SG 80 level.		
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	Not scored
	Justification	As detailed in the background (section 3.4.5) there are measures in place to prevent that practice of shark finning at WCPFC level (although its Technical and Compliance Committee, is not currently able to determine whether this objective is being achieved), at the PNA level, and at the level of the Solomon Islands. The measures in place at the Solomon Islands level are considered to be the most important and effective for this fishery. They include license conditions that specify that any shark species that is caught incidentally, for which fishing is not permitted, whether by the Fisheries Act, Regulations and any regional conservation and management measure, must be released as soon as possible after the shark is brought alongside the vessel in a manner that causes as little harm as possible. These conditions also require that all sharks retained on board must have their fins naturally attached to the carcass. Most importantly, the measures also include mandatory unloading in port, 100% port inspections of all offloadings by MFMR staff to verify the unloaded catch and any catch that is retained onboard, and reviews of VMS tracks to ensure there was no transshipment of product outside of port. MFMR officers physically board the vessel pre- and post offload and witness the entire offload. There is also some observer coverage but at the moment this is very low and does not reach the 20% coverage levels which is considered necessary as a standalone measure to reach SG80 under GSA2.4.5. The port inspections of all catches		

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.		
		and inspections of holds are, however, considered to be good external form of validation that shark finning is not occurring. Furthermore, Solomon Islands law requires sharks to be landed with fins naturally attached which avoids any issues with ratio calculations of fin/meat.We consider that the inspection of all unloadings and the absence of any shark finning being detected are consistent with the requirements outlined in GSA2,.4.5, as an alternative measure and evidence that it is highly likely that finning is not taking place. This meets the requirements of the SG 60 and SG 80 levels.		
e	Review of alternative measures to minimise 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?	Not scored	Not scored	Not scored
	Guidepost	Main secondary - Bait As already noted, only qualitative information regarding the source of the bait was available. Nevertheless, bait fisheries usually use gear such as purse seines from which the catch is handled in bulk and have negligible unwanted catch. Kelleher (2005) has noted that midwater trawl and purse seine fishing for small pelagic fish generated little discards. We consider it unlikely that there would be significant levels of unwanted catch in the source bait fishery and therefore (following GSA3.5.3) that this scoring issue need not be scored at the SG 60 or SG 80 levels. The SG 100 level is not scored because one other scoring issued did not reach the SG 80 level.		
References		Kelleher 2005.		

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): 6 By the fourth surveillance audit, provide evidence that there is a partial strategy in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of bait species classified as main at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	75

Evaluation Table for 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	Qualitative information is adequate to estimate the impact of the UoA on the main secondary species with respect to status. OR If RBF is used to score PI 2.2.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for main secondary species.	Some quantitative information is available and adequate to assess the impact of the UoA on main secondary species with respect to status. OR If RBF is used to score PI 2.2.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species.	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.
	Met?	Y	N	
	Justification	There are no main secondary species other than the bait used in the fishery (see Section 3.4.3). Main secondary - Bait There is qualitative information available on the quantity of bait purchased and used by the UoA fishery in addition to bait provenance. The quantity of bait purchased was calculated by estimating the average weight of bait per hook and multiplying this by the total number of hooks used by the UoA annually. These results suggest that the total removals in the presumed bait fishery are minimal (400-800t) and the impact of the UoA on the source bait populations is likely to be small. . Only qualitative information is available for bait provenance so it is not possible to assess the impact of the bait used on the status of the source populations. Nevertheless, the bait is a species of sardine, and such species typically have large and highly productive populations from which an extraction of a few hundred tonnes would have minimal impact. The species is thought to be Goldstripe Sardine which is considered to be among the most widespread and productive marine species (Thomas et al. 2014). This meets the requirements of the SG 60 but not the SG 80.		
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.

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.		
	Met?			Not scored
	Justification	This scoring issue is not scored because none of the SG80 scoring issues are met.		
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.	Information is adequate to support a strategy to manage all secondary species, and evaluate with a high degree of certainty whether the strategy is achieving its objective.
	Met?	Y	N	
	Justification	There are no main secondary species other than the bait used in the fishery (see Section 3.4.3). Main secondary - Bait As outlined in PI 2.2.2, there are measures in place for bait but not a partial strategy. The information available could also not be currently sufficient to support a partial strategy, given the lack of knowledge about the species and sources of bait used. This meets the requirements of the SG 60 level but not of the SG 80 level.		
References		Thomas et al. 2014		

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): 7 SI a & c) By the fourth surveillance audit, provide some quantitative evidence that is adequate to assess the impact of the UoA on main secondary species with respect to status and is adequate to support a partial strategy to manage bait species classified as main.	60

Evaluation Table for 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 UoA fleets. 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 – All elements	Y – All elements	Y – Silky sharks; N – Oceanic whitetip sharks, Marine turtles
	Justification	The ETP species considered here are listed in Table 12. Silky shark The most recent stock assessment of silky shark for the WCPP-only (Common Oceans (ABNJ) Tuna Project 2018b) concluded that silky sharks were subject to overfishing in the WCPO but were likely not to be in an overfished state. Therefore, rebuilding of silky sharks is not required. The stock was estimated to have been depleted to 47-50% of unfished levels and the biomass was likely to be above the MSY reference biomass (i.e. not overfished) ($Pr(SB_{2016} > SB_{MSY}) = 72\%$). Estimates of the quantities of silky shark taken by different gear types consistently indicate that longlines are responsible for the majority of the catch of silky sharks (Peatman 2017 and 2018 as reported in Clarke 2018). The catch reported by observers on longliners in Solomon Island waters is very small although this is likely to be an underestimate of the actual catch (Clarke 2018). Retention of silky sharks is prohibited, and all landings are monitored. The catch of the target species by UoA vessels is a very low-level percentage of the total WCPFC Convention Area (Table 4). These factors provide a high degree of confidence that there are no significant detrimental effects of fishing by UoA vessels on silky sharks. This meets the requirements of the SG 60, SG 80 and SG 100 levels. Oceanic whitetip shark		

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		
		The stock assessment of oceanic whitetip shark (Rice and Harley 2012) concluded that oceanic whitetips have been overfished and remain subject to overfishing. The estimated spawning biomass had declined to levels far below SB_{MSY} ($SB_{CURRENT}$ / SB_{MSY} = 0.153) and across all model runs undertaken $SB_{CURRENT}$ was much lower than SB_{MSY} (the 5th and 95th quantiles were 0.082 and 0.409). The catch reported by observers on longliners in Solomon Island waters is very small although this is likely to be an underestimate of the actual catch (Clarke 2018). Retention of silky sharks is prohibited, and all landings are monitored, but the numbers caught and released are not well known. Post-release survival of released oceanic whitetip sharks is unknown but the condition on release from longlines suggest more die than survive (Peatman et al. 2018). The very low-level percentage of the total WCPFC Convention Area catch of the target species by UoA vessels (Table 4) and the broad distribution of the species makes it highly likely that the known direct effects of fishing by UoA vessels within the Solomon Islands EEZ on oceanic whitetip shark are not hindering their recovery. But in the absence of better data on both the numbers caught and released and their post-release survival, we have not attached a higher degree of confidence to this conclusion. This meets the requirements of the SG 60 and SG 80 levels but not the SG 100 level. Marine turtles The catch reported by observers on longliners in Solomon Island waters is very small (<1% of the total catch for all species) although this is likely to be an underestimate of the actual catch. The reasons that shark catch is underestimated (Clarke 2018) are likely to be applicable to the catch of turtles. Retention of turtles is prohibited and all landings are monitored. Post-release survival of released marine turtles is unknown. The very low level percentage of the total WCPFC Convention Area catch of the target species by UoA vessels (Table 4) and the broad distribution of all the species makes it highly likely that the known direct effects of fishing by UoA vessels within the Solomon Islands EEZ on marine turtles are not hindering their recovery. But in the absence of better data on both the numbers caught and released and their post-release survival, we have not attached a higher degree of confidence to this conclusion. This meets the requirements of the SG 60 and SG 80 levels but not the SG 100 level. GSA3.1.8 requires that, in assessing the impact of a UoA on P2 species, this should include both observed and unobserved fishing mortality, where unobserved mortality may include IUU fishing, animals that may die after encountering fishing gear that may not be recorded, and mortality that may result from lost fishing gear that continues to fish (ghost fishing). The low level of observer coverage for the UoA means that there is greater likelihood of there being unobserved mortality of all ETP species. This has been factored into the scores assigned above for each type of ETP species. Unobserved mortality may also occur through ghost fishing but, as described under PI 2.1.1 above any lost pelagic longline gear is only likely to capture fish while the bait remains on the hook and the mortality rate from lost longlines is usually low (Macfadyen et al. 2009).		
c	Indirect effects			
	Guidepost		Indirect effects have been considered and are thought to be highly likely to not	There is a high degree of confidence that there are no significant detrimental

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		
			create unacceptable impacts.	indirect effects of the fishery on ETP species.
	Met?		Y – All elements	N – All elements
	Justification	Indirect trophic effects of fishing for tuna on the tropical pelagic ecosystem have been considered through a variety of modelling approaches (Kitchell et al. 1999, Sibert et al. 2006, Allain et al. 2007, Allain et al. 2015, Lehodey et al. 2015) and, although the impacts are not negligible, they have not been considered irreversible and no particular impacts on ETP species have been identified. The warm pool ecosystem was found to be resistant to considerable perturbation (e.g. large changes in the harvest of the surface fish community) a feature apparently related to the high diversity of predators in the food web that consume a wide range of prey (Allain et al. 2015). The indirect effects have thus been considered and are unlikely to create unacceptable impacts on any ETP species but the level of evidence is insufficient to assign a high degree of confidence to this conclusion. The requirements of the SG 80 level but not of the SG 100 level are therefore considered to be met for each of the elements		
References		Clarke 2018, Common Oceans (ABNJ) Tuna Project 2018b, Kitchell et al. 1999, Sibert et al. 2006, Allain et al. 2007, Allain et al. 2015, Lehodey et al. 2015.		
OVERALL PERFORMANCE INDICATOR SCORE:				Score
CONDITION NUMBER (if relevant): Condition				85

PI 2.3.1 Scoring Calculation

UoA	Element	SI a	SI b	SI c	Element score	PI score
All	Silky shark	N/A	100	80	90	85
	Oceanic whitetip shark	N/A	80	80	80	
	Marine turtles	N/A	80	80	80	

Evaluation Table for PI 2.3.2 – ETP species management strategy

PI 2.3.2		The UoA has in place precautionary management strategies designed to: • 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 UoA vessels. 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 – All elements	Y – All elements	Not scored
	Justification	Silky shark CMMs 2013-08 contains specific conservation measures for silky sharks and CMM 2010-07 also contains measures to reduce mortality of sharks generally. The general provisions of Article 5 of the WCPFC Convention, including the requirement to avoid overfishing, apply to silky shark. There is some monitoring through logbooks and a low level of observer coverage although these are likely to underestimate the actual catch (Clarke 2018). A stock assessment has been undertaken (Common Oceans (ABNJ) Tuna Project 2018a and 2018b), and CMM 2013-08 responded to the findings of a previous assessment. At the Solomon Islands level, there is also prohibition on retention of silky shark and this is monitored during unloading which is required to be in port. The process for review and modification of CMMs by the WCPFC is a mechanism for the modification fishing practices should unacceptable impacts be identified. These WCPFC and Solomon Islands measures are considered to constitute a strategy as defined in Table SA8 of the FCR v2.0 that is sufficient to ensure that the UoA would not hinder the recovery of silky shark populations should that be required. This meets the requirements of the SG 60, and SG 80 levels. Oceanic whitetip shark			

PI 2.3.2		The UoA has in place precautionary management strategies designed to: • 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.		
		CMMs 2011-04 contains specific conservation measures for oceanic whitetip sharks that responded to evidence of stock declines for this species. CMM 2010-07 also contains measures to reduce mortality of sharks generally. The general provisions of Article 5 of the WCPFC Convention, including the requirement to avoid overfishing, apply to oceanic whitetip shark. There is some monitoring through logbooks and low levels of observer coverage although these are likely to underestimate the actual catch (Clarke 2018). A stock assessment has also been undertaken (Rice and Harley 2012). At the Solomon Islands level, there is also prohibition on retention of oceanic whitetip sharks and this is monitored during unloading which is required to be in port. The combination of these WCPFC and Solomon Islands is considered to constitute a strategy as defined in Table SA8 of the FCR v2.0 that is sufficient to ensure that the UoA do not hinder the recovery of oceanic whitetip shark populations. This meets the requirements of the SG 60 and SG 80 levels. Marine turtles CMM 2008-03 contains measures specifically designed to reduce the impacts of fishing marine turtles. As detailed in the background, these include taking all practicable measures to safely release any captured turtles. The general provisions of Article 5 of the WCPFC Convention, including the requirements to assess impacts on non-target species and protect biodiversity, apply to marine turtles. At the Solomon Islands level, there are regulations and license conditions to avoid catching turtles and to release with as little harm as possible any that are caught. The combination of these WCPFC and Solomon Islands measures are considered to constitute a strategy that is sufficient to ensure that the UoAs do not hinder the recovery of marine turtle populations, but without any assessment of the status of all such populations the measures are not considered to be a comprehensive strategy. This meets the requirements of the SG 60 and SG 80 levels.		
c	Management strategy evaluation			
	Guidepost	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	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.	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.
	Met?	Y – All elements	Y – All elements	Not scored
	Justification	Silky shark There is an objective basis for confidence that the measures for silky sharks (mainly zero retention and prohibition on the use of wire traces and J-hooks) will be effective based on the direct evidence from the fishery on compliance with these measures. The quantitative analysis of stock status (Common Oceans (ABNJ) Tuna Project 2018a) also provides confidence that previous fishing has not greatly depleted the WCPFC component of the		

PI 2.3.2		The UoA has in place precautionary management strategies designed to: • 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.		
		stock. Nevertheless, the lack of information from observers on the level of catch by longlines in the WCPF in general, and for this UoA in particular, and on compliance with the safe release requirements, together with poor information on the level of post-release survival, prevents there being high confidence in the effectiveness of the strategy. This meets the requirements of the SG 60 and SG 80 levels. Oceanic whitetip shark There is an objective basis for confidence that the measures for oceanic whitetip shark (mainly zero retention and prohibition on the use of wire traces and J-hooks) will be effective based on the direct evidence from the fishery on compliance with these measures. And the quantitative analysis of stock status (Rice and Harley 2012) provides information directly about the fishery and the species involved. Nevertheless, the lack of information from observers on the level of catch by longlines in the WCPF in general, and for this UoA in particular, and on compliance with the safe release requirements, together with poor information on the level of post-release survival, prevents there being high confidence in the effectiveness of the strategy. This meets the requirements of the SG 60 and SG 80 levels. Marine turtles There is an objective basis for confidence that the measures for marine turtles (mainly zero retention, prohibition on the use of J-hooks) will be effective based on the direct evidence from the fishery on compliance with these measures. Studies have demonstrated the effectiveness of circle hooks for reducing bycatch of marine turtles (Common Oceans (ABNJ) Tuna Project 2017). The lack of information from observers on the level of catch by longlines in the WCPF in general, and for this UoA in particular, and on compliance with the safe release requirements, together with poor information on the level of post-release survival, prevents there being high confidence in the effectiveness of the strategy. This meets the requirements of the SG 60 and SG 80 levels.		
d	Management strategy implementation			
	Guidepost		There is some evidence that the measures/strategy is being implemented successfully.	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).
	Met?		N	N
	Justification	All elements Although the port inspections, which check for compliance with the zero retention and gear requirements, are useful they do not provide evidence of practices at sea. The very low levels of observer coverage mean that there is limited information about the level of interaction with all ETP species by UoA vessels and about their compliance with requirements for the safe release of any captured sharks and turtles. Trials of electronic		

PI 2.3.2		The UoA has in place precautionary management strategies designed to: • 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.		
		monitoring approaches have demonstrated its potential to provide such evidence in the future but this technology is yet to be fully implemented for this purpose. The requirements of the SG 80 level are therefore not met.		
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.	There is 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.
	Met?	Y – All elements	Y – All elements	Not scored
	Justification	Silky shark and oceanic whitetip shark There is a WCPFC Shark Research Plan (WCPFC-SC13-2017/EB-IP-09) that contains a detailed list of projects concerning sharks that include updated assessments, improved data collection, stock discrimination studies, mitigation practices, training guides, and other activities. Actions specific to silky sharks are included in this plan together with other general shark work. Progress against this plan is regularly reviewed as SC meetings. Proposals to improve mitigation measures are also considered at SC meetings (e.g. Jones and Francis 2017). WCPFC has also supported the Common Oceans (ABNJ) Project that has initiated a range of projects including studies on post-release survival of sharks (WCPFC-SC13-2017/EB-IP-06). For the sharks considered here, this is evidence of an ongoing commitment to the review of the effectiveness of mitigation measures. Data on bycatch are collected by observers on all trips, results are presented annually to the relevant meetings, bycatch is a standing item on the agenda of the SC and the SC reviews the relevant CMMs at each annual meeting. So, in practice, the effectiveness of measures is reviewed annually, and any need for alternative measures would be detected regularly. This meets the requirements of the SG 60, and SG 80 levels. Marine turtles There are no research programs for marine turtles that are comparable to that for sharks. Nevertheless, there is ongoing attention to areas where interactions are considered a problem for various groups from specific fishing methods such as turtle entanglements in FADs (e.g. Pilling et al 2017b). Data on interactions with marine turtles are collected by observers when present on trips and presented annually to the relevant meetings, bycatch is a standing item on the agenda of the SC and the SC reviews the relevant CMMs at each annual meeting. So, in practice, the effectiveness of measures is reviewed annually and any need for alternative measures would be detected more promptly than biennially. This meets the requirements of the SG 60 and SG 80 levels.		

PI 2.3.2	The UoA has in place precautionary management strategies designed to: • 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.
References	Clarke 2018; Rice and Harley 2012; WCPFC-SC13-2017/EB-IP-06; WCPFC-SC13-2017/EB-IP-09

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): 8 By the fourth surveillance audit, provide evidence that measures/strategy for ETP species are being implemented successfully.	75

PI 2.3.2 Scoring Calculation

UoA	Element	SI a	SI b	SI c	SI d	SI e	Element score	PI score
All	Silky shark	N/A	80	80	<80	80	75	75
	Oceanic whitetip shark	N/A	80	80	<80	80	75	
	Marine turtles	N/A	80	80	<80	80	75	

Evaluation Table for 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: • 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 and the consequences for the status of ETP species.
	Met?	Y – All elements	N – All elements	Click here to enter text.
	Justification	Silky shark Information available on silky shark is collected mainly by the combination of vessel logbooks and observer programs (but with low observer coverage for this UoA) as outlined in section 3.2. It includes data on catch weight and effort at an operation level for most fleets, and some size composition data and biological data. These measures are supported by a Shark Research Plan that provides additional information on specific topics of relevance to the assessment of the impact of fishing by longlines. As silky sharks are not retained and there is only a very low level of observer coverage on Solomon Islands longliners (less than 3%) there is not sufficient quantitative information to adequately assess the UoA related mortality and impact on silky sharks. The level of mortality from fishing by UoA vessels, however, is expected to be small relative to the broader impact of fishing on the whole stock. The UoA itself is not considered to be a threat to the protection of silky sharks. There is a stock assessment for silky shark that has estimated the consequences of fishing on their status in the WCPO. There is sufficient qualitative information (such as from the limited observer records and inferences from the data for other WCPO fisheries) available to estimate the UoA related mortality. This meets the requirements of the SG 60 level but not the SG 80 level. Oceanic whitetip shark Information available on oceanic whitetip sharks is the same as for silky sharks. These measures are supported by a Shark Research Plan that provides additional information on specific topics of relevance to the assessment of the impact of fishing by longlines. As oceanic whitetip sharks are not retained and there is only a very low level of observer coverage on Solomon Islands longliners (less than 3%) there is not sufficient quantitative		

PI 2.3.3		Relevant information is collected to support the management of UoA impacts on ETP species, including: • 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.		
		information to adequately assess the UoA related mortality and impact on oceanic whitetip sharks . The level of mortality from fishing by UoA vessels, however, is expected to be small relative to the broader impact of fishing on the whole stock. There is a stock assessment that has provided an estimated of the consequences of fishing on the status of oceanic whitetip shark. Although this has estimated the species to be depleted by fishing, especially by longlines, the UoA itself is not considered to be a threat recovery of the species. There is sufficient qualitative information (such as from the limited observer records and inferences from the data for other WCPO fisheries) available to estimate the UoA related mortality. This meets the requirements of the SG 60 level but not the SG 80 level. Marine turtles Because marine turtles are not retained and there is only a very low level of observer coverage on Solomon Islands longliners (less than 3%) there is not sufficient quantitative information to adequately assess the UoA related mortality and impact on marine turtles. There is some quantitative information available but no quantitative estimate of the level of mortality for the UoA. The level of mortality from fishing by UoA vessels, however, is expected to be small relative to the broader impact of fishing on the whole stock. Although marine turtles are considered to have depleted by fishing, including by longlines, the UoA itself is not considered to be a threat recovery of any of these species. There is sufficient qualitative information (such as from the limited observer records and inferences from the data for other WCPO fisheries) available to estimate the UoA related mortality. This meets the requirements of the SG 60 level but not the SG 80 level.		
b	Information adequacy for management strategy			
	Guidepost	Information is adequate to support measures to manage the impacts on ETP species.	Information is adequate to measure trends and support a strategy to manage impacts on ETP species.	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.
	Met?	Y – All elements	N – All elements	
	Justification	Silky shark The information described under SI a and that provided at landings inspections are adequate to support the strategy to manage the impacts of the UoA on silky shark. There is a high degree of certainty that the UoA is not a threat to silky sharks and the information collected is adequate to support measures to manage the impacts to the species posed by the fishery. The lack of observer data, however, means that information is currently not adequate to measure trends and support a strategy to manage impacts on ETP species.This meets the requirements of the SG 60 level but not the SG 80. Oceanic whitetip shark The information described under SI a and that provided at landings inspections are adequate to support the strategy to manage the impacts of the UoA on whitetip sharks. It is highly likely that the UoA is not a threat to oceanic whitetip shark and the information collected is adequate to support measures to manage the impacts to the species posed by		

PI 2.3.3		Relevant information is collected to support the management of UoA impacts on ETP species, including: • 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.
		the fishery. The lack of observer data, however, means that information is currently not adequate to measure trends and support a strategy to manage impacts on ETP species. This meets the requirements of the SG 60 level but not the SG 80. Marine turtles The information described under SI a and that provided at landings inspections are adequate to support the strategy to manage the impacts of the UoA on marine turtles. It is highly likely that the UoA is not a threat to marine turtles and the information collected is adequate to support measures to manage the impacts to the species posed by the fishery. The lack of observer data, however, means that information is currently not adequate to measure trends and support a strategy to manage impacts on ETP species. There is also a lack of population level data. This meets the requirements of the SG 60 level but not the SG 80.
References		

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): Condition 9 SI a) By the fourth surveillance audit, provide evidence that 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. SI b) By the fourth surveillance audit, provide evidence that information is adequate to measure trends and support a strategy to manage impacts on ETP species.	60

PI 2.3.3 Scoring Calculation

UoA	Element	SI a	SI b	Element score	PI score
All	Silky shark	60	60	60	60
	Oceanic whitetip shark	60	60	60	
	Marine turtles	60	60	60	

Evaluation Table for 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(s) covered by the governance body(s) responsible for fisheries management.		
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	As noted in the background, there is no possibility that the fishery would routinely contact demersal habitats and no potential for serious or irreversible harm to pelagic habitats. Knowledge in relation to the way pelagic longline 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 fishery. Data from logbooks, VMS tracks of vessels and observer reports, provides good evidence that the fishery operates in areas and in a manner in which there is no serious or irreversible harm to habitats. This meets the requirements of the SG 60, SG 80 and SG 100 levels.		
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 in the background, the fishery does not interact with any VMEs. The pelagic habitat does not have any of the characteristics of VMEs outlined in GSA3.13.3.2 so this scoring issue 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
	Justification	As noted for scoring issue a, there is no possibility that the fishery would routinely contact demersal habitats and no potential for serious or irreversible harm to pelagic habitats (whether minor or not). Evidence is provided from the same sources (VMS, observer records and logbooks). This meets the requirements of the SG 100 level.		

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(s) covered by the governance body(s) responsible for fisheries management.	
References		
OVERALL PERFORMANCE INDICATOR SCORE:		Score
CONDITION NUMBER (if relevant): Condition		100

Evaluation Table for 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	Y
	Justification	Pelagic longlines do not interact with any seafloor habitat during fishing operations and are not considered capable of affecting the epipelagic habitat. The only exception could be in the case of gear loss. Any gear loss would entail lines either sinking to the ocean floor or drifting to shore and in neither scenario could sufficient impact on any habitat such that it would cause serious or irreversible harm such that the habitat outcome level of 80 would not be achieved. No management strategy is therefore required, but there is at least a partial strategy in the form of the regulations that mandate the longline gear and CMM 2017-04. This CMM requires CCMs to "encourage their fishing vessels within the WCPFC Convention Area to retrieve abandoned, lost or discarded fishing gear and retain the material on board" and "Where retrieval is not possible or does not occur, CCMs shall encourage their fishing vessels to report the latitude, longitude, type, size and age of abandoned, lost or discarded fishing gear." It also requests CCMs "to ensure adequate port reception facilities are provided to receive waste from fishing vessels" Information collected on the fishery is sufficient to monitor fishing locations and practices. This is considered to be a strategy that would ensure that any change to this situation would be detected. SG 60, SG 80 and SG 100 requirements are met.		
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 longline 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 fishery and it is not considered capable of affecting the epipelagic habitat. Monitoring of catches and fishing practices and locations provides high confidence on information from the fishery and the habitats concerned. Such data helps confirm that catches are only taken from surface waters and in offshore locations as expected for the UoA. This meets the requirements of the SG 60, SG 80 and SG 100 levels.		
c	Management strategy implementation			
	Guidepost		There is some quantitative evidence that the measures/partial strategy is	There is clear quantitative evidence that the partial strategy/strategy is being implemented successfully

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.		
			being implemented successfully.	and is achieving its objective, as outlined in scoring issue (a).
	Met?		Y	Y
	Justification	Information on the spatial extent and on the timing and location of use of the longline fishing gear is collected in logbooks and by VMS (100% coverage), and thus there is accurate monitoring that provides quantitative evidence of successful implementation in that fishing locations and practices are identified and required data are reported. SG 80 and SG 100 requirements are met.		
D	Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs			
	Guidepost	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?	Not relevant	Not relevant	Not relevant
	Justification	The fishery does not interact with any VMEs.		
References				

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): Condition	100

Evaluation Table for 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			
	Guidepost	The types and distribution of the main habitats are broadly understood. OR 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.	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. OR 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.	The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.
	Met?	Y	Y	Y
	Justification	The fishery takes place in the epipelagic habitat and so does not interact with benthic habitat during its operation. The distribution of the pelagic habitat is known over the spatial range within which the fishery operates from widely available sea charts and bathymetric maps of the Western Pacific Ocean. This meets the requirements of the SG 60, SG 80 and SG 100 levels. This meets the requirements of the SG 60, SG 80 and SG 100 levels.		
b	Information adequacy for assessment of impacts			
	Guidepost	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. OR If CSA is used to score PI 2.4.1 for the UoA: Qualitative information is adequate to estimate the consequence and spatial	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. OR If CSA is used to score PI 2.4.1 for the UoA: Some quantitative information is available and	The physical impacts of the gear on all habitats have been quantified fully.

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.		
		attributes of the main habitats.	is adequate to estimate the consequence and spatial attributes of the main habitats.	
	Met?	Y	Y	Y
	Justification	Information on the spatial extent and on the timing and location of use of the fishing gear is collected VMS (100% coverage) and thus there is accurate, near real-time monitoring of the spatial extent of interaction, and the timing and location of use of the fishing gear. The fishing gear used by the UoA is not considered capable of affecting the epipelagic habitat and does not interact with benthic habitat during its operation		
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	Y
	Justification	For the UoA, the habitat under consideration is the pelagic water column and no hard substrate is impacted by the fishery. The physical, chemical and biological properties of the WCPO are regularly monitored. The client vessels all operate under a VMS scheme and thus there is accurate, near real-time monitoring of the spatial extent of interaction, and the timing and location of use of the fishing gear. SG 80 and SG 100 requirements are met.		
References				

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): Condition	100

Evaluation Table for 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	As described in the background, there have range of models of the structure and functioning of the pelagic ecosystems that support the main tuna fisheries and their responses to fishing and climate change (e.g. Allain et al. 2007, Allain et al. 2015, Kitchell et al. 1999, Lehodey et al. 2013a, Leroy et al. 2013, Sibert et al. 2006). There have been substantial impacts from the depletion of the main target species, but although the trophic level of the catch had decreased slightly, no such decrease was apparent in the population trophic level (Sibert et al., 2006). Other modelling (Allain et al. 2015) suggests that the structure of the warm pool/cold tongue ecosystem is resistant to considerable perturbation (e.g. large changes in the harvest of the surface fish community). Overall, findings indicated that tuna fishery impacts on top-level predators in the Pacific Ocean were substantial but that ecosystem impacts were likely to be minor. These studies suggests it is unlikely that neither the Solomon Islands Longline fishery in particular nor the whole WCPFC tuna fishery, are having an irreversible impact on ecosystem structure or functioning to a point where there would be a serious or irreversible harm This meets the requirements of the SG 60, SG 80 and SG 100 levels.		
References				

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): Condition	100

Evaluation Table for 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			
	Guidepost	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	Y
	Justification	At the regional level, the 1995 FAO Code of Conduct for Responsible Fisheries is used as the framework for sustainable fisheries for an "Ecosystem Approach to Fisheries Management (EAFM)". Tuna are important predatory species in the Pacific Ocean. The WCPFC's application of the FAO code extends to the highly migratory fish species including tuna through Conservation and Management Measures such as CMM 2014-01 on the management of albacore, bigeye, yellowfin and skipjack, as well as to the management of non-target species, in particular through Resolution 2005-03 on Non-Target Fish Species and CMMs to improve the protection of sharks. Although not specifically designed to manage impacts on the ecosystem, the range of measures in place is considered to represent a strategy that works to achieve the intended outcome. We note that there is not specific ecosystem management plan for the WCPO but also SA3.17.3.2 states that 'It may not be necessary to have a specific "ecosystem strategy" other than that which comprises the individual strategies for the other components under P1 and P2.' There are measures in place to address the main impacts of the UoA as these would arise from the directed fishing at albacore and yellowfin tuna. This meets the requirements of the SG 60, SG 80 and SG 100 levels.		
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 fisheries/ ecosystems).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the UoA and/or the ecosystem involved	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or ecosystem involved
	Met?	Y	Y	Y
	Justification	The regional stock assessments indicate that current harvest strategies and management measures have been successful in maintaining target species about the B_{MSY} level. The strategy considers the significant sources of fishery related risks to the WCPO ecosystem, namely the removal of target species, risks associated with impacts of bycatch and discarding of a wide range of non-target species. Overall, the strategy is considered likely to work. The extensive ecosystem modelling (described under PI 2.5.1), together with the current and projected future healthy status of all the key tuna species, are results of a form		

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.		
		of testing for the specific ecosystem that provides high confidence that the strategy will work. This meets the requirements of the SG 60, SG 80 and SG 100 levels.		
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 objective as set out in scoring issue (a).
	Met?		Y	Y
	Justification	As previously indicated, regional stock assessments show that current harvest strategies and management measures have largely been successful in maintaining target species at about the B_{MSY} level. Available ecosystem modelling suggests it is unlikely the client fishery is having an irreversible impact on ecosystem functioning. Improved observer coverage for the for the longline fishery would provide better information relevant to monitoring ecosystem impacts from that sector. Nevertheless, overall, there is evidence that measures are being implemented successfully. SG 80 and SG 100 requirements are met.		
References				

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): Condition	100

Evaluation Table for 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			
	Guidepost	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	A number of organisations are collecting data to improve the knowledge of the structure of the Pacific Ocean pelagic ecosystem. This occurs through observer programmes (e.g. bycatch composition and quantities), trophic analyses (e.g. stomach contents, stable isotopes), and mid-trophic level sampling (e.g. acoustics and net sampling of micronekton and zooplankton). However, trophic analyses and mid-trophic level sampling are conducted on a project-by-project basis and are not continuous in space and time. Information is adequate to broadly understand the key elements of the ecosystem, meeting SG 80.		
b	Investigation of UoA impacts			
	Guidepost	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but have not been investigated in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and some have been investigated in detail.	Main interactions between the UoA and these ecosystem elements can be inferred from existing information, and have been investigated in detail.
	Met?	Y	Y	N
	Justification	Trophic structure of pelagic ecosystems in the Pacific, including the WCPO, has been characterised using Ecopath and Ecosim models based on diet data (Allain et al. 2007). SEAPODYM is a dynamic system model developed for investigating spatial tuna population dynamics under the influence of both fishing and environmental effects (Lehodey et al., 2013b). The continued development and application of the SEAPODYM model to the work of the WCPFC Scientific Committee, including its application to tuna and billfish fisheries in the South Pacific, is facilitated through the multi-agency Project 62 which affiliates the independently funded work on SEAPODYM into the SC's work programme (Lehodey et al., 2013b). A list of current projects is given in Lehodey et al. (2013b). Main impacts of the fishery on the key ecosystem elements can be inferred from existing information and some have been investigated in detail, though not to the extent to meet SG 100. SG 60 and SG 80 requirements are met.		
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

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem.		
	Justification	Information on target and non-target species (bycatch and ETP species) is gathered by the SPC through logbook data and the regional observer programme, as well as being available via a number of historical research projects. Sufficient information is available to identify the range of species that are impacted and to determine their respective roles e.g. their trophic level and potential roles in transfer of energy and nutrients between various pelagic habitats (epipelagic, mesopelagic and bathypelagic) or between pelagic and demersal habitats. In order to improve the availability of data, the Kobe Bycatch Technical Working Group (KBTWG) was established in 2009 with the aim to Identify, compare and review the data fields and collection protocols of logbook and observer bycatch data being employed by each Tuna RFMO. The KBTWG provides guidance for improving data collection efforts and, to the extent possible, the harmonization of data collection protocols among tuna RFMOs. These data will improve future analysis of ecosystem functions. The information gathered is sufficient to identify species impacted and understand the main functions of the ecosystem components. SG 80 and SG 100 requirements are met.		
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	Data are collected on the key target and non-target tuna and billfish species taken by the fishery through logbooks. This information, when combined with other similar data from other fisheries in the WCPFO is sufficient to allow ecosystem modelling to detect an increase in risk levels to ecosystem components and allow the main consequences for the ecosystem to be inferred. SG 80 and SG 100 are met.		
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	N
	Justification	As indicated above, data are collected on the key target and non-target tuna and billfish species taken by the fishery through logbooks and the regional observer programme. Information available is sufficient to allow ecosystem modelling to detect an increase in risk levels to ecosystem components.. Strategies to manage ecosystem impacts could be developed using the available information but a lack of data on components such as bycatch from observers and the quantity and composition of the bait being used could limit their effectiveness. This meets the requirements of the SG 80 level but not of the SG 100 level.		
References		Allain et al. 2007; Lehodey et al. 2013b; and other references as described in the background section 3.4.7.		

PI 2.5.3	There is adequate knowledge of the impacts of the UoA on the ecosystem.	
OVERALL PERFORMANCE INDICATOR SCORE:		Score
CONDITION NUMBER (if relevant): Condition		90

Principle 3

Scoring under Principle 3 considers all applicable biological and/or jurisdictional levels that apply to the management system of the UoA (GSA4.1.1). The applicable jurisdictions are determined on a PI, and SI, basis, because the relevant jurisdictions that affect performance relative to the respective scoring guideposts vary based on the aspect of the governance and fishery management system being assessed. For transparency, the scope of scoring is stated explicitly at the beginning of each rationale.

The potentially relevant jurisdictions include the WCPFC, PNA, and the Solomon Islands. Though there are vessels from three flag states operating within the UoA, given the nature of the UoA, that is, a fishery targeting yellowfin and albacore tuna using longlines and fishing solely within the EEZ of the Solomon Islands via charter arrangements with a locally based company, the primary focus of scoring is the management arrangements in the Solomon Islands.

Evaluation Table for 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: • 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?	Yes	Yes	No
	Justification	Regional At the regional level, as described by Banks et al. (2011), Medley and Powers (2015) and Morison and McLoughlin (2016), the WCPFC Convention, the Nauru Agreement, the Solomon Islands fisheries laws and the national tuna management plan are all consistent with the provisions of UNCLOS and UNFSA. UNCLOS makes specific provisions for straddling stocks and highly migratory fish stock in Articles 63 and 64 and requires that "... States ...cooperate directly or through appropriate international organizations with a view to ensuring conservation and promoting the objective of optimal utilization ..." of the stocks. This is reinforced in Articles 118 and 119 where States are required to cooperate in the conservation and management of high seas stocks. Article 119 further develops the need for catch limits, the use of the best available scientific evidence, the need to rebuild overfished stocks and to manage fishing impacts on non-target stocks. These provisions are developed and additional guidance is provided in the UNFSA. The UNSFA, as an implementing Agreement, seeks to elaborate on roles and responsibilities and requirements of UNCLOS with respect to managing straddling stocks and highly migratory fish stocks. Article 8 reinforces the need for States to cooperate to ensure the objective of the Agreement "to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of the Convention" is achieved. As the first RFMO to be established following the entry into force of the UNFSA, the WCPF Convention draws on all the key provisions of the UNFSA. It is also designed to reflect the regional political, socio-economic, geographical and environmental characteristics of the WCPO. The arrangements set out in the WCPF Convention, and implemented via		

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: • 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.
		Conservation Management Measures (CMMs), are designed to deliver outcomes consistent with MSC Principles 1 and 2. The Solomon Islands has ratified UNCLOS, the UNFSA and is a Member of the WCPFC. In addition, in 2014-15 it undertook a major revision of its fisheries legislation. Nauru Agreement The Nauru Agreement is a regional agreement made to facilitate cooperation in the management of fisheries resources of common interest. The Agreement is a binding treaty-level regional fisheries management instrument established in the 1980's to manage tuna stocks within national waters. The Parties to the Nauru Agreement (PNA) are Solomon Islands, Tuvalu, Kiribati, Marshall Islands, Papua New Guinea, Nauru, Federated States of Micronesia and Palau. The objectives of the Agreement are to enhance regional solidarity and to promote economic control and participatory rights over the tuna resources in PNA waters, with a primary focus to: ▪ 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. The PNA have consistently sought to develop and implement arrangements designed to improve the sustainability of tuna stocks in their waters and maximise the economic return to them when allowing other entities to fish these stocks. The Parties have effective national legal systems and have demonstrated effective cooperation to deliver management outcomes consistent with MSC Principles 1 and 2. Solomon Islands A comprehensive suite of legislation, the Fisheries Management Act 2015, the Fisheries Management Regulations 2017 and 2018 and the Tuna Management and Development Plan govern the management of the Solomon Islands long line fishery for yellowfin and albacore tuna. As a Party to the UNFSA, WCPF Convention and the Nauru Agreement, Solomon Islands has accepted the obligation to comply with the provisions of these Agreements, in particular the obligation to apply the principles in each of those agreements, including the precautionary approach and the need for compatible management arrangements, in their

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: • 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.
		EEZ. The approaches to implementation of these instruments in national laws are broadly similar, reflecting the long period of collaboration of the Solomon Islands in tuna management through PNA, FFA and more recently, the WCPFC. The Fisheries Management Act 2015, builds on previous legislation to provide contemporary legislation implementing all required obligations. The Ministry for Fisheries and Marine Resources (MFMR) is the government agency responsible for administering Solomon Islands fisheries law. The Fisheries Management Act 2015 has the following objectives: *"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."* *The Solomon Islands Tuna Management and Development Plan 2015 objective is:* *"Tuna fisheries are managed to ensure Solomon Islands receives maximum economic and social benefits from the sustainable use of its resources."* The TMDP states: *"The overall objective is logical, supported by law, and considered to have wide stakeholder support. It describes the essential aims that MFMR pursues when exercising its mandate under the law to safeguard the nation's fish resources.* *MFMR's role is ultimately determined by the identification of specific fisheries management and development goals that it will pursue."* The arrangements in the Act, supporting Regulations and Tuna Management and Development Plan provide a comprehensive suite of management and enforcement powers designed to deliver management outcomes consistent with MSC Principles 1 and 2. The Act and Regulations provide for the development and implementation of rules and regulations governing fishing operations and for the application of sanctions where these rules are not followed. They also provide for organized and effective cooperation with other parties via the FFA, PNA and the WCPFC. The Solomon Islands participates in regional MCS arrangements both within WCPFC and with the FFA/PNA. The Tuna Management and Development Plan makes specific reference to the management of international fisheries and working with the WCPFC. The Solomon Islands participates in sub-regional arrangements (FFA and PNA) which feed into WCPFC discussions and decisions, it also contributes scientific data from their longline fisheries for collective use by SPC on behalf of all WCPFC Parties (GSA 4.3.2.3.). Therefore, SG60 and SG80 requirements are met. While the WCPFC provides arrangements for organised and effective cooperation, there are no binding procedures governing cooperation with other

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: • 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.		
		parties (i.e. those who choose not to be a Party or do not abide by all CMMs), therefore SG100 is not met.		
b	Resolution of disputes			
	Guidepost	The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.	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 management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes that is appropriate to the context of the fishery and has been tested and proven to be effective.
	Met?	Yes	Yes	No
	Justification	In relation to the UoA there are two management systems where disputes could arise and may need to be addressed and resolved - the WCPFC and the Solomon Islands management system. There could also be a dispute with other Parties to the LL VDS, although this seems unlikely. The WCPFC system develops and implements binding CMMs that Members are then required to implement in domestic legislation/management arrangements. Once these arrangements are implemented in domestic legal frameworks most disputes would centre on individual fishers or vessels not abiding by the national law, mainly related to licensing or enforcement issues domestically. Given the nature of the fishery in the UoA, the main focus will be on national level systems, however, regional arrangements also covered as CMMs developed by WCPFC must be implemented domestically. The WCPFC dispute resolution mechanism is set out in Article 31 of the Convention. Essentially, this Article implements the dispute settlement arrangements established in the UNFSA and binds all WCPFC Members to those arrangements whether or not they are Parties to the UNFSA. These arrangements are set out in Part VIII of the Agreement where Article 30 sets out the Procedures for the Settlement of Disputes. These arrangements mirror the provisions of Part XV of UNCLOS. The WCPFC has well defined arrangements for consideration of proposals for management regulations and actions prior to decisions being taken. Decisions can take the form of binding CMMs or non-binding resolutions. Commission meetings are held annually and are supported by annual Scientific Committee and Technical and Compliance Committee meetings. Members and observers can attend these meetings but may not be able to participate in all sessions. The system is transparent in that it makes sure that all members are fully informed of the issues under consideration and are able to participate in informed discussion prior to a decision being taken.		

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: • 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.		
		The WCPFC has a consensus-based decision-making process, with provision 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. Article 20 (with details in Annex 2) of the Convention allows for the establishment of a Panel to review decisions of the Commission in certain defined circumstances. These are: a) The decision is inconsistent with the provisions of this Convention, the Agreement or the 1982 Convention; or b) The decision unjustifiably discriminates in form or in fact against the member concerned. This review process has not been used to date. The UNFSA/UNCLOS dispute settlement mechanism also applies to the Nauru Agreement, the Palau Arrangement and hence the LL VDS, by virtue of the fact that all Parties to these Agreements have ratified both UNCLOS and the UNFSA. At the national level, the Solomon Islands Fisheries Management Act 2015 has specific provisions for the resolution of legal disputes. Section 10 establishes a Fisheries Licensing Committee to make recommendations to the Director of Fisheries on the grant, renewal, suspension and revocation of licenses and authorizations to be issued pursuant to the Act. Section 11 establishes a Fisheries Appeal Committee with the function of hearing appeals from - (a) decisions on licensing in accordance with section 52; and (b) any substantive decision of the Director of Fisheries taken in the performance or exercise of his or her functions, powers and duties under this Act. Section 53, formalizes the appeal rights in relation to licenses available under the Act. Section 35 requires that the Director of Fisheries maintain and make publicly available a record of the outcome of any legal or administrative action taken in respect of any violation against this Act that results in a judgment or administrative determination. Solomon Islands law establishes a management system that provides a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and is appropriate to the context of the UoA. The Solomon Islands and WCPFC systems meet SG60 and SG80 requirements, however SG100 is not met because neither have been tested and proven to be effective.		
c	Respect for rights			
	Guidepost	The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on	The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for	The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: • 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.		
		fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
	Met?	Yes	Yes	Yes
	Justification	The main consideration in relation to performance against scoring issue (c) is whether a suitable framework exists or does not exist to address the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood, not on the effectiveness or results (e.g., allocation of access) of such a framework (GSA 4.3.6.). Since the UoA operates fully within the Solomon Islands EEZ, Solomon Islands Law is the primary management system where legal rights are created explicitly or established by custom for people dependent on fishing for food or livelihood. Section 21 of the Fisheries Management Act 2015 provides explicit legal recognition of the rights of people dependent on fishing for food and their livelihood. It states: “21. (1) Customary rights shall be fully recognised and respected in all activities falling within the scope of this Act. (2) No person shall, without permission given by the relevant customary rights holders, use a vessel other than a vessel used for customary fishing, to - (a) engage in fishing; (b) otherwise enter; or (c) directly or indirectly cause destruction to an area subject to customary rights. (3) Any person who contravenes subsection (2) commits an offence and on conviction is subject to a fine not exceeding the maximum amount described in the First Schedule or imprisonment to a term not exceeding 1 year, or to both. (4) Where it is proved that customary rights have been breached, the High Court may order compensation to be paid to the customary rights holder.” Section 5 (1) (m) of the Act requires that all functions, duties and responsibilities under the Act shall be exercised in a manner which requires that customary rights shall be recognised and access to customary fishing ensured. Customary fishing is defined as: “….. fishing by indigenous Solomon Islanders, in waters where they are entitled by custom to fish, where - (a) the fish are taken in a manner that, having regard to the boat, the equipment and the method used, is substantially in accordance with the indigenous Solomon Islanders’ customary traditions; (b) any boat used is small scale, individually operated and if motorised does not have more than one motor; (c) the fish are taken primarily for household consumption, barter or customary social or ceremonial purposes; and (d) the fish are not taken or used for commercial purposes;”		

PI 3.1.1		The management system exists within an appropriate legal and/or customary framework which ensures that it: • 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.
		Solomon Islands law provides an explicit framework to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood consistent with the objectives of MSC Principles 1 and 2. Therefore the management system meets the requirement for SG 60, SG 80 and SG 100.
References		UNCLOS; UNFSA; WCPFC Convention; FFA Convention; Nauru Agreement; Palau Arrangement for the Management of the Western Pacific Tuna Fishery – Management Scheme (PNA LL VDS); Banks et al. 2011; Medley and Powers 2015; Morison and McLoughlin 2016, Solomon Islands Fisheries Management Act 2015; Solomon Islands Fisheries Management Regulations 2017 and 2018; Solomon Islands Tuna Management and Development Plan 2015.
OVERALL PERFORMANCE INDICATOR SCORE:		Score
CONDITION NUMBER (if relevant): Condition		85

Evaluation Table for PI 3.1.2 – Consultation, roles and responsibilities

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
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?	Yes	Yes	Yes
	Justification	The management system in relation to the UoA in this fishery involves two areas of responsibility (i) at the regional level and (ii) the Solomon Islands. In both cases the functions, roles and responsibilities are identified, both in WCPF Convention arrangements and in the domestic Solomon Islands legislation. Given the nature of the fishery, the Solomon Islands arrangements are considered to be more important for this scoring issue. Regional 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 Solomon Islands levels, as well as support organisations FFA and SPC. The WCPF Convention provides information on the functions, roles and responsibilities of member states (in particular, Articles 23 – Obligations of members of the Commission and 24 – Flag State duties) and the key committees formed under Commission, the Scientific Committee and Technical and Compliance Committee. CMMs provide clear requirements for such things as sharing information, meeting obligations, conservation measures, and applying appropriate levels of surveillance and enforcement. Solomon Islands The Solomon Islands legislation and policy identifies organisations and individuals involved in the management process. It provides explicit information on functions, roles and responsibilities for all key areas of interaction. Part 3 of the Fisheries Management Act 2015 sets out in detail the functions, powers and duties of the Minister; of the Permanent Secretary and of the Director of Fisheries. It also provides details of the delegation of functions, powers and duties. The Act establishes the Fisheries Licensing Committee, the Fisheries Appeals Committee and the Fisheries Advisory Council. Supporting Fisheries Regulations provide more detail on membership, functions and roles and responsibilities where necessary.		

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
		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. As such, SG 100 requirements are met.		
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?	Yes	No	No
	Justification	Management decisions in relation to this Scoring Issue are taken at both the regional level (WCPFC) and at the Solomon Islands management system level. At the WCPFC level Members are required to implement agreed decisions. Members can feed into the management system by providing data, preparing proposals and contributing to the discussion/decision process. The Solomon Islands management system has consultative processes built into the formulation of fisheries management plans and interaction with stakeholders via the Fisheries Advisory Council and the Tuna Industry Association of the Solomon Islands (TIASI). Regional The management/decisions making system of the WCPFC involves annual meetings of the Commission, which are proceeded by meetings of the two key subsidiary committees – the Scientific Committee and the Technical and Compliance Committee. There are also extensive, regular formal and informal consultation processes through the PNA and FFA at the regional level. All those with an interest in the fishery are able to participate in these meetings. At the PNA level, there is also the opportunity for local knowledge/information from Members and the PNA Fisheries Information Management System (FIMS) to provide near real time input into management decisions/arrangements. These processes regularly seek and accept relevant information in relation to the management of the fishery and the outcomes of these processes demonstrate consideration of the information. Solomon Islands The Solomon Islands management arrangements for this fishery are founded on the requirements of the Fisheries Management Act 2015 and its subordinate legislation and policies. The Act seeks to elaborate fisheries management arrangements, including objectives and goals, via fisheries management plans. The requirements for fisheries		

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
		management plans are spelt out in sections 17 and 18 of the Act and in the Second Schedule to the Act which provides guidance on content and processes. In relation to consultation and the processes to seek and accept relevant information, the Second Schedule requires that: “The Director in the preparation of national, provincial and community fisheries management plans shall ensure consultation with relevant stakeholders in the development of each Plan.” The Tuna Management and Development Plan 2015 states: “It is recognized that all tuna resource stakeholders have legitimate interest in the Plan. The formulation of the Plan includes consultation with a wide range of stakeholders, including fishing companies, fishermen, other national government ministries and NGOs. The process should have the effect of making stakeholders more aware of how management of the nation’s fish resources is conducted and so more readily comply with management provisions.” The Fisheries Advisory Council (FAC) established under the Act and includes a range of stakeholders: coastal and offshore fishing industry, fishing communities, Provincial Governments, NGO with an interest in fisheries, the FFA, and ex officio representatives from the Attorney-General’s Chambers, the Ministry for the Environment, the Ministry for Finance, the Ministry for Mines, Minerals and Energy and the Ministry for Police and Maritime Enforcement. The FAC is responsible for monitoring and reviewing all aspects of the Plan. The Tuna Industry Association of the Solomon Islands (TIASI) as the peak tuna industry body consults with MFMR on a range of industry and fisheries management issues. The Plan states that “Information on fishery performance and management action is available on request, and explanations are provided to the Tuna Industry Association of the Solomon Islands (TIASI) for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring evaluation and review activity.” The arrangements spelled out in the Fisheries Management Act 2015, the Tuna Management and Development Plan and the opportunity for stakeholder input to regional (PNA and WCPFC) management decisions provide a system which enables relevant local knowledge to be introduced into the management system. However, the FAC has not met since 2015 with the MFMR advising that it is currently in process of appointing new members. The TIASI has met more regularly with the MFMR however it is unclear the extent to which bilateral discussions provide input to the management system. As such SG60 requirements are met, however SG80 and SG 100 are not.		
c	Participation			
	Guidepost		The consultation process provides opportunity for all interested and affected parties to be involved.	The consultation process provides opportunity and encouragement for all interested and affected parties to be involved, and

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
				facilitates their effective engagement.
	Met?		Yes	No
	Justification	This Scoring Issue considers whether appropriate consultation processes are in place to ensure interested parties can participate in decision making. The primary level of decision-making for the UoA is at the local Solomon Islands level, however decisions of the WCPFC and PNA also impact on these local decisions. This Scoring Issue considers consultation at both the regional level and the Solomon Islands. Regional The WCPFC has a comprehensive governance structure that provides for Members, Participating Territories and Cooperating Non-members to engage in policy and regulation decisions. It also allows observers (intergovernmental and non-government) to participate in meetings of the Commission and its subsidiary bodies, including the SC, the TCC and the Finance and Administration Committee. All relevant Small Island Developing States are members or participating territories and additional access and support is provided through the participation of the Pacific Islands Forum Fisheries Agency. The FFA provides Members with the opportunity to consult on key issues prior to WCPFC meetings. Attendance at Commission and related meetings is comprehensive, and logistic and financial support is provided to ensure attendance, meaningful involvement and interaction in the cooperative management. 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. Solomon Islands As outlined above in SIb, the Solomon Islands has comprehensive consultative arrangements set out in the Fisheries Management Act 2015, the Tuna Management and Development Plan 2015 and in policies for engaging with key stakeholders. The Fisheries Advisory Council (FAC) has a broad consultative role and its functions are to advise the Minister and make recommendations at the request of the Permanent Secretary on matters relating to fisheries conservation, management, development and sustainable use. It has broad membership as set out in the Fisheries Regulations. The FAC also has a defined role in monitoring the implementation of the Tuna Management and Development Plan. However, as mentioned in Sib, the FAC has not met since 2015. The TIASI is focused more narrowly as the industry body representing all catching methods, but does have more regular meetings with MFMR. While the WCPFC arrangements are extensive and do facilitate and encourage effective engagement, thereby meeting the SG 100 level, it is not clear that the Solomon Islands arrangements actively encourage and facilitate all interested and affected parties in consultation and meeting processes. As such the SG80 is awarded overall.		

PI 3.1.2	The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties
References	WCPF Convention, WCPFC Rules of Procedure, Solomon Islands Fisheries Management Act 2015, Solomon Islands Fisheries Management Regulations 2017, Solomon Islands Tuna Management and Development Plan 2015, TIASI meeting agendas.

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): 10 By the fourth surveillance audit, provide evidence that the management system includes consultation processes that regularly seek and accept relevant information from a range of sources, including local knowledge. Additionally, that the national management system demonstrates consideration of the information obtained.	75

Evaluation Table for 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			
	Guidepost	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?	Yes	Yes	Partial
	Justification	GSA 4.5 states that *"The emphasis of this PI is on the presence or absence of long-term objectives at the broader management level, i.e., the objectives of the management agency for all UoAs under its control. Where UoAs fall under dual control (e.g., internationally managed UoAs where management falls to both a national agency and a bilateral/multilateral agreement or organisation, or federally managed UoAs which have some provincial or state management component), the subject of PI 3.1.3 should be the wider organization". Furthermore, GSA 4.5 also states: "This PI forms an important part of the overall understanding of the use or otherwise of a precautionary approach in the UoA but is not concerned with the operational implementation of the precautionary approach within the 'day-to-day' management of the UoA itself."* In relation to the UoA and the fishery being considered, the long-term objectives that guide decision-making consistent with MSC Fisheries Standard and the precautionary approach are therefore those established by the WCPFC and those set by Solomon Islands law. Arrangements in PNA waters are required to implement binding WCPFC CMMs and thus be consistent with the explicit WCPFC objectives. The WCPF Convention provides clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and 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). This approach is explicit within applicable WCPFC CMMs, however, it is not clear that the precautionary approach has always been fully applied in the past. As indicated in Banks et al. (2011), the Nauru Agreement (the core PNA instrument) does not explicitly require objectives consistent with the precautionary approach. While not explicit, these are implicit as the PNA rely on healthy and sustainable stocks to underpin domestic management arrangements and economic returns. PNA members have all ratified the UNFSA, which requires the application of the precautionary approach and all commit to fully implement WCPFC CMMs. Under the key Solomon Islands fisheries law, the Fisheries Management Act 2015, there are clear long-term objectives which explicitly guide decision making and management		

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.
		policy and are consistent with MSC Standards and the precautionary approach. The objective of the 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." The Act requires that all functions, duties and responsibilities shall be exercised in a manner consistent with 18 principles (Section 5(1)). Importantly, among other things this requires that: (c) management measures shall be based on the best scientific evidence available to maintain or restore stocks at levels capable of producing sustainable yield, as qualified by relevant environmental and economic factors including fishing patterns, the interdependence of stocks and relevant international standards; (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; (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; (f) the ecosystem as a whole and the general marine and aquatic environment shall be protected; and (i) international agreements and relevant international law shall be effectively implemented; Overall, there are explicit objectives incorporating the precautionary approach and ecosystem-based management that meet the MSC Fisheries Standards in WCPFC management arrangements, meeting SG 60 and SG 80. However, these objectives and the use of the precautionary approach have not always been followed within management and policy by the Commission and it has historically struggled to do so for some stocks. The development and implementation of target reference points to meet the management objectives has been slow. Evidence that the objectives are guiding decision-making is available in Commission reports however, it is unclear that they are explicit within and required by management policy. At the Solomon Islands level, the Fisheries Management Act 2015 provides clear long-term objectives, which when combined with fishery specific management plans and the principles in Section 5(1), provide for decision making consistent with MSC Fisheries Standard and the precautionary approach which is explicit and required in management policy. SG 80 is met for both the national and regional systems. SG 100 is met for the Solomon Islands but not the WCPFC. Based on partial scoring at the SG 100 level, the overall score is 90.
References		Banks et al. 2011, Medley and Powers 2015, Sieben et al. 2019, Palau Agreement, Nauru Agreement, WCPF Convention, Solomon Islands Fisheries Management Act 2015.

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant):	90

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.
Condition	

Evaluation Table for 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			
	Guidepost	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?	Yes	Yes	Partial
	Justification	This PI requires that the management system have specific objectives designed to achieve the outcomes expressed in MSC's Principles 1 and 2 and seeks to establish whether these objectives are implicit, explicit and/or well defined and measurable. The management system focus remains on two levels, a broader regional level and a specific national level, as this is where detailed fisheries management arrangements of the UoA are established. The WCPFC is responsible for the overall sustainability and management of target stocks and for considering and minimizing the impact of the fishery on ecosystem components whereas the Solomon Islands must ensure that its management system is compatible with WCPFC CMMs and does not undermine any regional management arrangements. At the regional level, there are a large number of WCPFC CMMs that relate directly to P1 and P2 outcomes, which cover target catch, bycatch and ecosystem outcomes. CMMs are developed and endorsed by the Commission pursuant to the requirements of the Convention and the advice from both the SC and TCC and aim to provide explicit outcomes. In relation to Principle 1 CMM 2018-01 requires that at a minimum, stocks are maintained at levels capable of producing maximum sustainable yield. For yellowfin tuna, this requires that pending agreement on a target reference point the spawning biomass depletion ratio (SB/SBF=0) is to be maintained at or above the average SB/SBF=0 for 2012-2015. For albacore tuna, in 2018 the Commission agreed on an interim target reference point (TRP) for south Pacific albacore at 56 percent of spawning stock biomass in the absence of fishing (0.56 SBF=0) with the objective of achieving an 8 percent increase in catch per unit of effort (CPUE) for the southern longline fishery as compared to 2013 levels. Article 2 of the WCPFC Convention requires that the Commission: "…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 Solomon Islands is required to fully implement WCPFC CMMs. Section 5 (1) (d) of the Fisheries Management Act 2015, requires that 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. WCPFC CMMs and PNA/Palau Arrangement measures are automatically incorporated into national measures and license terms and conditions. All vessels, including distant water vessels are bound to comply with the national licensing conditions. The first two goals of the Tuna		

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.
		Management and Development Plan "To ensure that fish stocks are maintained at sustainable levels to support profitable fisheries" and "To manage fisheries within recognised principles of the ecosystem approach to fisheries," the Expected Results and the Objectives and Strategies to support Goals and Strategies, provide well defined measurable short and long-term objectives to manage the fishery. Based on the above SG 100 is met for the Solomon Islands. 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 and this is consistent with other current MSC assessments of the yellowfin and albacore tuna fisheries. However, it is unclear how well defined and measurable these objectives are, particularly in relation to Principle 2 (Sieben et al. 2019). As such SG 100 is not met. A partial score of 90 is therefore awarded.
References		Sieben et al. 2019, WCPF Convention; WCPFC CMM 2018-01; Solomon Islands Fisheries Management Act 2015; Solomon Islands Tuna Management and Development Plan 2015

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): Condition	90

Evaluation Table for 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			
	Guidepost	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?	Yes	Yes	
	Justification	According to FCRv2.0 "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. It is not an evaluation of the quality of those measures and strategies as this is covered elsewhere in the tree structure under P1 and P2 (GSA 4.8)". "Established" decision-making processes should be understood to mean that there is a process that can be immediately triggered for fisheries-related issues, the process has been triggered in the past and has led to decisions about sustainability in the fishery" In this fishery this Scoring Issue again relates primarily to the role and operations of the WCPFC as it is the body tasked with developing and implementing management arrangements for the two tuna species under review. There is however, also a role for the Solomon Islands as once WCPFC measures have been implemented they need to be able to ensure domestic arrangements complement established regional arrangements and are effectively implemented. The WCPFC effectively sets the arrangements that result in measures and strategies being developed aimed at achieving fishery-specific objectives. The decision-making processes have resulted in a comprehensive set of CMMs and strategies to achieve the specific objectives for the longline fishery. The PNA and the Solomon Islands are required to implement binding CMMs developed by the Commission. Section 5 (1) (d) of the Solomon Islands Fisheries Management Act 2015, requires that management measures shall, as appropriate, be based on applicable standards agreed at international, regional or sub-regional level. At the Commission level, the Convention provides direct guidance on decision-making, review of decisions and dispute settlement. Decision-making is generally open and seeks to use the best available information with advice being channeled via the SC and TCC. Decisions are documented. Decision-making by the Commission is by consensus; however, if consensus cannot be reached a system of voting, as detailed in the Convention, can be applied. The Convention also provides clear guidance in relation to overarching fisheries management arrangements, which requires that the precautionary approach be applied consistent with Articles 5 and 6 as well as Annex II of the UNFSA. In addition, the Convention requires the use the best scientific information available and CMMs be based on ecosystem-based fisheries management.		

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.		
		At the Solomon Islands level, the Fisheries Management Act 2015, along with the Regulations and the Tuna Management and Development Plan provide established decision-making processes that result in measures and strategies to achieve regional and national fishery-specific objectives. Decision-making processes relating to fishery objectives are therefore well documented, and in most cases established at the WCPFC level. The arrangements at the national level in the Solomon Islands provide decision making processes which support both regional and local fishery-specific objectives. As such, both SG 60 and SG 80 are met.		
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?	Yes	No	No
	Justification	Key decision making for this fishery occurs at the regional level, with WCPFC being at the highest level and PNA one level below. The Solomon Islands has an important role in these two levels of decision-making and a further requirement to respond to serious and other important issues within the UoA fleets, by bringing any domestic issues to the WCPFC/PNA for consideration in the applicable regional decision-making processes or dealing with them at the domestic level if they are not regional level issues. Regional 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 identify serious issues at the regional or sub-regional level. These issues are addressed through agreed CMMs, for example 2018-01 Conservation and Management Measure for Bigeye, Yellowfin and Skipjack Tuna in the Western and Central Pacific Ocean. The system allows Commission members to be fully informed of the issues under consideration and enables participation in informed decision-making. The Commission can be shown to react to important issues in a transparent manner. The timeliness of decision-making is less clear and to some extent this is a result of the governance arrangements applying to cooperative regional fisheries management (consensus decision making, annual meetings etc.). Within this context, the WCPFC decision-making framework has resulted in a suite of CMMs and strategies to respond to sustainability issues and to achieve the specific objectives. The PNA has established effective decision-making processes which respond to issues identified in relevant research, monitoring, evaluation and consultation. All PNA members have tuna management plans that are applied at the national level. The PNA management		

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.		
		system is underpinned by a fishery information system, the Fisheries Information Management System (FIMS) which provides ready access to timely data. PNA members make use of the services provided by both SPC and FFA to identify and respond to important issues. While this is not currently critical in the LL VDS, as Parties approach their Party Allowable Effort this will allow timely and adaptive management as needed. Decision-making processes at the WCPFC and PNA level respond to serious and other important issues in a timely manner indicating SG 60 and SG 80 are met, however SG 100 is not met as it is not clear that all issues are dealt with in a timely manner. Solomon Islands At the Solomon Islands level, the Fisheries Management Act 2015 in addition to requiring the implementation of WCPFC CMMs, specifically requires under Section 5 (c) that "management measures shall be based on the best scientific evidence available to maintain or restore stocks at levels capable of producing sustainable yield, as qualified by relevant environmental and economic factors including fishing patterns, the interdependence of stocks and relevant international standards;" and in 5 (h) "complete and accurate data and information concerning fishing activities and fisheries resources shall be collected and, as appropriate, shared in a timely manner;" This combined with consultative arrangements with stakeholders, in particular before PNA and WCPFC meetings, provides the basis for effective decision-making processes that respond to serious and other important issues in a timely and adaptive manner while taking account of the wider implications of these decisions. It is less clear how effective these arrangements are at the domestic level. MFMR staff are required to manage the fishery in accordance with the provisions of the Act, however the level of broader stakeholder consultation and the timeliness of input to local and regional serious and other important issues is unclear. This is partly due to the fact that a significant consultative mechanism, the FAC has not met since October 2014. There have been bilateral meetings between MFMR and the four companies operating in the UoA (they meet annually to discuss management arrangements and their annual MoUs and licence conditions) and also between MFMR and the TIASI. However, no evidence was provided that these meetings deal specifically with relevant research, monitoring, evaluation and consultation in a transparent, timely and adaptive manner. As such, SG 60 requirements are met, however SG 80 and SG 100 requirements are not met.		
c	Use of precautionary approach			
	Guidepost		Decision-making processes use the precautionary approach and are based on best available information.	
	Met?		Yes	
	Justification	As with SI 3.2.2a, assessment of this Scoring Issue is primarily related to the processes and management decisions taken at the fishery specific management level – therefore the		

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.		
		focus is WCPFC as the institution responsible for fishery management measures. The role of the PNA and the Solomon Islands is essentially to ensure agreed CMMs and management arrangements are implemented. The WCPF Convention requires that CCMs, directly and through the Commission, apply the precautionary approach. The Convention, in its mirroring of UNFSA requirements, 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 as required by the WCPF Convention text, and the Commission makes adequate provision for this to be achieved. At the PNA level, there have been some concerns expressed in relation to the purse seine VDS as to whether decision-making processes use the precautionary approach and are based on best available information. These have been addressed by the PNA and Blyth-Skyrme et al. (2017) indicating that the PNA process, both within their own systems as well as the conditions set by the previous MSC certification, have evolved positively. While the precautionary approach has not been explicitly adopted by the PNA, member commitments to the WCPFC and the UNFSA demonstrate an implicit commitment to the precautionary approach in management of regional fisheries. At the Solomon Islands level, the Fisheries Management Act 2015 Section 5 (e) specifically requires that: “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.” In addition, Section 5 (c) requires that: “management measures shall be based on the best scientific evidence available to maintain or restore stocks at levels capable of producing sustainable yield ……”. Based on the above information it is evident that decision-making processes for the WCPFC, PNA and the Solomon Islands are based on precautionary approach and use the best available scientific information, meeting SG 80.		
d	Accountability and transparency of management system and decision-making process			
	Guidepost	Some information on the fishery’s performance and management action is generally available on request to stakeholders.	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.	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.

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.		
	Met?	Yes	No	No
	Justification	The highest level of accountability for this fishery rests with the WCPFC as the body responsible for the overall management of the resource and as the "decision making" entity. However, as the UoA operates solely within the Solomon Islands EEZ, the Solomon Islands also has an obligation to provide information on the fishery's performance and for management actions. At the WCPFC level, information and recommendations from research, monitoring, evaluation and review activity are published formally. Papers and reports from WCPFC plenary sessions, the SC and the TCC are also published formally and are publicly available on the Commission's website. These papers and reports provide a good level of transparency, showing how scientific and other information is used to inform management actions, which are then monitored for effectiveness and discussed at the Commission. As part of this process, each year the TCC receives a two-part Annual Report from each Member. The purpose of this report is to provide to the Commission with information on fisheries, research and statistics during the preceding calendar year (Part 1), and management and compliance issues since the previous report (Part 2). National Part 2 reports are not publicly available. This reporting process represents good practice. However, while reports are available, it is not clear that they represent all the information that is used in decision-making or that all the information provided is used in decision making. There is no formal, detailed explanation linking the information available/provided to the decision that results. In an international context it is recognized that it is very difficult to give full explanations for all decisions, since this might undermine co-operation. Decisions are often negotiated outcomes with the trade-offs not always apparent. At the Solomon Islands level, the Fisheries Management Act 2015 and the Tuna Management and Development Plan 2015 both provide information on objectives and management parameters for the fishery. The Act sets the broad framework and overarching objectives and management structure. The Plan provides detailed information on the fishery and the goals and strategies to achieve the objectives set for the life of the Plan. The plan defines these activities and the means to measure performance via objectively verifiable indicators. The Plan also encourages a stable and logical policy environment. The Fisheries Advisory Council (FAC), established under the Act, is responsible for reviewing and monitoring all elements of the Plan. The last meeting of the FAC was in October 2014 prior to the approval of the Plan by the Minister and it has not met since. At that meeting the FAC endorsed the TMDP and recommended that the Minister approve it. Despite the role envisaged in the Fisheries Management Act 2015 and the TMDP, the FAC has not had an ongoing role in monitoring and reporting on the operations of the Plan. The Plan states that "Information on fishery performance and management action is available on request, and explanations are provided to the Tuna Industry Association of the Solomon Islands (TIASI) for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring evaluation and review		

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.		
		activity". Evidence was not provided to the extent to which this information has either been sought by the TIASI or provided to them, although no doubt specific issues have been raised during bilateral discussions with MFMR. Each of the four companies operating in the UoA meet annually with the MFMR to discuss and agree on the annual MoU and licence conditions. In addition, the TIASI meets with the MFMR as an industry body. Limited information is available from these meetings as only one set of minutes was provided. The information available suggests there may be some discussion on the performance of the fishery at these meetings although the extent to which this information is available is unclear. Overall, SG 60 and SG 80 requirements are met for the WCPFC however, not all information is publicly available (National Part 2 Reports) and information is not comprehensive for all elements of the management system or available to all interested stakeholders, therefore SG100 is not met. For the Solomon Islands, due to a lack of evidence, it is unclear whether the arrangements set out in the TMDP are in fact being implemented. As such SG 60 requirements are met, however SG 80 and SG 100 requirements are not met.		
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?	Yes	Yes	No
	Justification	The management system in relation to this Scoring Issue covers both the WCPFC and the Solomon Islands. The Commission is the overarching management authority; it sets management arrangements and seeks to assess compliance by Members with the arrangements. It has dispute resolution and review arrangements which have not as yet been used. WCPFC CCMs are party to all decisions at the WCPFC as they can participate in the SC, the TCC, and WCPFC annual meetings where regional level final decisions are taken. Disputes/disagreements are typically resolved at WCPFC annual meetings. CCMs are all bound by WCPFC CMMs. The Solomon Islands management arrangements for the UoA are based on the PNA LL VDS and are implemented via domestic legislation. The Solomon Islands participates in PNA meetings and is actively involved in developing management arrangements. Domestically, arrangements are negotiated with key stakeholders (in the development of the Tuna Management and Development Plan) and through regular meetings with the four companies in the UoA and the TIASI. There are currently no legal challenges to the management system.		

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.
		To date, there have been no legal challenges to the management system at the regional or Solomon Islands level. Neither the Commission nor the Solomon Islands Government has identified or sought to proactively deal with management issues which may cause legal challenges. As such, SG 60 and SG 80 are met but SG 100 is not met.
References		Medley & Powers 2015, Blyth-Skyrme et al. 2017, WCPF Convention, WCPFC CMMs, UNFSA, Solomon Islands Fisheries Management Act 2015, Solomon Islands Fisheries Management Regulations 2017, Solomon Islands Tuna Management and Development Plan 2015.

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): 11 SI b) By the fourth surveillance audit, provide evidence that 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. SI d) By the fourth surveillance audit, provide evidence that 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.	75

Evaluation Table for 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			
	Guidepost	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?	Yes	Yes	No
	Justification	In relation to the UoA, the effectiveness of MCS arrangements considered in this Scoring Issue need to be considered at two levels – Regional and the Solomon Islands. While the WCPFC develop and set the management and MCS measures, it is up to the Solomon Islands to ensure they fully implement and enforce agreed CMMs and domestic management arrangements. Regional At this level there is a well-developed MCS system that has demonstrated if applied diligently by Members, can enforce management arrangements. This system is underpinned by the Compliance Monitoring Scheme (CMS) – CMM 2018 - 07. The purpose of the CMS is to ensure that Members, Cooperating Non-Members and Participating Territories (CCMs) implement and comply with obligations arising under the Convention and CMMs adopted by the Commission. The CMS is designed to: (i) assess CCMs' compliance with their WCPFC obligations; (ii) identify areas in which technical assistance or capacity building may be needed to assist CCMs to attain compliance; (iii) identify aspects of CMMs which may require refinement or amendment for effective implementation; (iv) respond to non-compliance by CCMs through remedial and/or preventative options that include a range of possible responses that take account of the reason for and degree, the severity, consequences and frequency of non-compliance, 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 by CCMs with their WCPFC obligations. The annual TCC reports reflect the status of fishery compliance in the WCPFC and the extent to which CCMs not only report, but how well they comply with arrangements. The TCC summary reports publicly identify member compliance (or non- compliance). The FFA is the main service organisation providing MCS support for the coastal States (including the Solomon Islands) in the WCPO. The arrangements FFA provides are comprehensive and include a regional MCS strategy endorsed by Forum Fisheries		

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.
		Committee Ministers, (covers regional operations and cooperation), a regionally agreed benchmark level of observer coverage and at-sea and in-port inspections. The FFA Surveillance Centre (RFSC) undertakes regional coordination of MCS activity and assesses the risk of non-compliance by vessels. The RFSC monitors fishing vessel activity using a combination of the Vessel Monitoring System (VMS), Automatic Identification System (AIS) and Synthetic Aperture Radar (SAR). MCS arrangements are also supported by the QUAD Operational Working Group. This group comprises the aerial and naval arms of Australia, France, New Zealand and the USA who provide aerial and surface assets to assist regional surveillance. Regional (WCPFC and FFA) MCS systems includes harmonized Terms and Conditions of Access, a regional VMS system, Regional Register of Foreign Fishing Vessels and a range of regional MCS cooperation programmes, including the Niue Treaty (a multilateral treaty of members of the FFA to enhance their ability to enforce effectively their fisheries laws, and deter breaches). At the Solomon Islands level a comprehensive MCS system has been implemented. Part 8 of the Fisheries Management Act 2015 provides extensive MCS provisions – the appointment and powers of authorised officers; the appointment, functions and duties of observers, port samplers and fish quality control auditors; provisions for the protection and obstruction of authorised officers; and requirements for vessel monitoring and use of ports. Part 12 provides provisions relating to evidence. In addition to the surveillance services provided by the FFA which provides risk assessments, VMS monitoring and annual coordinated operations, there are comprehensive MCS measures in place in the fishery domestically. Before considering the licensing of a vessel, it must be in good standing on the FFA Register, have registered with the PNAO on the LL VDS register and have completed a vessel safety inspection. Subject to meeting these requirements and payment of any necessary fees, a licence will be issued. Once the licence has been issued, vessel days can then be purchased. All vessels are subject a pre-inspection before fishing can commence. Vessels may also be asked to participate in the electronic monitoring (EM) trial and to carry an observer if requested to so. The Solomon Islands National Observer Programme (SINOP) states that it provides up to 5% coverage for longline vessels. WCPFC Annual Reports suggests that it has been less than 2 per cent in recent years and in 2017 was less than 1 percent with only two trips observed. Solomon Islands is in the process of e-monitoring trials for both catch logbook data using the integrated Fisheries Information Monitoring System (iFIMS) and EM using multiple camera technology. These activities support MFMR's data collection and compliance systems. MFMR currently has EM on 8 vessels (two from each of the companies in the UoA) and plans to roll out the technology to more vessels in 2019. All vessels in the UoA are required to have their catch inspected and recorded in the Solomon Islands and all landings and inspections are monitored by MFMR Fisheries Officers. For NFD vessels, product is inspected/landed in Noro. There are ten fisheries officers based in Noro. The fisheries officers check where the vessel has been fishing (via VMS and logbook), the vessel licence conditions and the unloading. 48 hours' notice is required prior to port entry. If an observer is on the vessel they provide their trip report on arrival in port.

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
		Vessel masters/owners can choose not to land product in the Solomon Islands or to sell to other domestic companies. Where product is not landed in the Solomon Islands, it is not considered as part of the UoA/UoC. Based on this, there is evidence that both the WCPFC and the Solomon Islands have monitoring, control and surveillance systems in place and have demonstrated an ability to enforce relevant management measures, strategies and/or rules. SG60 and SG80 levels are met. Neither are considered to achieve SG100.		
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?	Yes	Yes	No
	Justification	In relation to this Scoring Issue, the primary focus is the Solomon Islands. While the WCPFC develops and implements (via Members) management and MCS arrangements, it has few if any, sanctions available to it should flag States or vessels/companies fail to abide by CMMs. As all fishing for the UoA takes place in the Solomon Islands EEZ, the arrangements in the Solomon Islands will be the focus for this scoring issue. Part 10 of the Solomon Islands Fisheries Management Act 2015 deals with Jurisdiction, Procedure, Fines and Liabilities. Section 98 of the Act provides that: "An offence against this Act shall be prosecuted before the High Court, except where jurisdiction is within the Magistrates Court and where summary administrative proceedings are taken in accordance with Part 11 of this Act." The First Schedule of the Fisheries Management Act 2015 provides details of Maximum Fines in Penalty Units. The Schedule lists the Section or subsection of the Act to which it applies, the Title of the offence and the Maximum Fine. The use of Penalty Units enables fines to be increased as necessary over time without the need to amend the primary legislation. The Schedule has over 3 pages of offences and their corresponding maximum fines. MFMR provided the following information in relation to recent offences: Summary table of fishery infringements within the Solomon Islands EEZ from 2014 – 2018.		

Date	Gear Type	Nature of offence	MFMR action	Penalty
March 2016	LL	Breach of Licence Conditions	Vessel detained and released upon payment of fine	SBD $2.5m
23 January 2017	LL	Breaching section 49 (2) (a) and (b) of SI FMA 2015	Vessel detained and released after payment of fine	SBD $ 1.0m

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.

6 February 2017	PS	Breach 2016 License conditions 8 for Purse Seine vessels operating in SI waters which contravene section 49(2) (a) (b) of the FMA 2015	Vessel detained and released after fine payment	SBD $ 1.0m
14 August 2018	LL	Non- compliance with license conditions	Vessel detained for investigation	SBD $ 100,000

Source MFMR

The infringement cases in the Table were all handled via administrative proceedings. The Summary Administrative Proceedings provisions are contained in Section 116 and 117 of the Fisheries Management Act 2015. The Administrative processes involves the Ministry of Fisheries and Marine Resources, the Office of the Director of Public Prosecution and the Attorney General's Office. This process can only proceed where the Company or Vessel admit to the offence or infringement and agreed to have the matter dealt with via these provisions.

Advice provided by MFMR officials (both management and fisheries officers) during the onsite visit indicate few offences and a good level of compliance with licence and other conditions. The provisions of the Act and Regulations together with this advice demonstrate that there are sanctions to deal with non-compliance, which are consistently applied and provide evidence of effective deterrence. As such SG 60 and SG 80 requirements are met. Evidence that sanctions demonstrably provide effective deterrence was not provided, as such SG 100 is not met.

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, when required, providing information of importance to the effective management of the fishery.
	Met?	Yes	Yes	No
	Justification	The focus for this Scoring Issue is again at the Solomon Islands level. While the WCPFC sets the overall management framework, for this UoA which operates solely within the Solomon Islands EEZ it is the domestic management arrangements which are paramount. In this regard, the Solomon Islands Government has a particular interest in ensuring that management arrangements are as comprehensive, and robust as possible and non-compliance is minimized. The overall MCS arrangements described in the Background and above in PI 3.2.3 SIa provide a broad overview of the systems in place to ensure fishers comply with the		

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
		management system. The comprehensive nature of the MCS arrangements, pre-fishing checks and inspections; requirements to be in good standing on regional registers – including being on the PNAO LL VDS register; the use of VMS and iFIMS to monitor and record fishing activity; the duplication in providing information of importance to the effective management of the fishery (e-logs as well as paper logs); the increasing use of electronic monitoring and the requirement to have all catch inspected and recorded, indicates that there is limited scope for non-compliance and hence confidence that fishers are complying with management arrangements. Advice from MFMR officials during the onsite visit on fleet compliance with management arrangements supports this conclusion. SG 60 and SG 80 requirements are met, however as evidence of "a high degree of confidence" was not provided SG 100 is not met.		
d	Systematic non-compliance			
	Guidepost		There is no evidence of systematic non-compliance.	
	Met?		Yes	
	Justification	The focus of this scoring issue is the Solomon Islands. It is noted that even in well-managed and resourced domestic fisheries, with effective MCS systems in place, some non-compliance will occur. However, the information presented in PI 3.2.3 SIa-SIc suggests that there is no evidence of systematic non-compliance. SG 80 is therefore met.		
References		WCPFC CMM 2018-07; FFA MCS arrangements; Niue Treaty; Solomon Islands Fisheries Management Act 2015; MFMR.		

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): Condition	80

Evaluation Table for 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?	Yes	Yes	No
	Justification	For this Scoring Issue the fishery-specific management system considered is the management arrangements developed and implemented by the WCPFC and the management system in place in the Solomon Islands. WCPFC is the body with overall responsibility for the sustainability and management of the target stocks, while the Solomon Islands is responsible for compatible management arrangements within the Solomon Islands EEZ. The WCPFC has well developed arrangements to provide a range of information to the Secretariat and Commission Members, this includes information provided by the Scientific Committee, and the Technical and Compliance Committee. Both these committees are established by the Convention, which sets out the functions for each and comprise representatives from CCMs, technical advisors/experts and observers. Both have key roles to play in monitoring and evaluating key parts of the overall fishery-specific management system. Section 17 of the Solomon Islands Fisheries Management Act 2015 provides for the preparation and implementation of Fisheries Management Plans. The Second Schedule of the Act provides details of what must be included in a management plan. It requires that a Fisheries Management Plan specify the objectives to be achieved and their appropriate indicators in the management of the fishery resource or fishery management area. Paragraph 6 of the Second Schedule requires that: “Fisheries management plans are to identify the indicators to assess the effectiveness of the management measures included in the Plan.” And in Paragraph 14, that they: “ ….. provide for the duration and periodic review of the Plan.” The Solomon Islands Tuna Management and Development Plan 2015 was developed in 2014 and revised pursuant to the Act which came into effect in 2015. It was approved by the Minister and Cabinet in 2015. It contains all the necessary elements, including a detailed matrix covering Outcomes and activities, Objectively verifiable indicators, Means of verification and any necessary assumptions. The combination of the WCPFC measures and those in place by virtue of the Solomon Islands Tuna Management and Development Plan 2015 provide mechanisms to evaluate key parts of the fishery-specific management system. As such, SG 60 and SG 80 requirements are met. It is unclear whether these arrangements ensure that there are mechanisms in place to evaluate all parts of the management system, as such SG 100 is not met.		

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.		
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?	Yes	Yes	No
	Justification	The focus for this scoring issue again examines both arrangements that the WCPFC level and at the Solomon Islands Ministry of Fisheries and Marine Resources level. As outlined in 3.2.4 SIa the WCPFC has well developed arrangements for the regular internal review of the fishery-specific management system by virtue of the two committees established by the Convention – the Scientific Committee and the Technical and Compliance Committee. At the regional level, WCPFC does not have a regular program of external reviews. The WCPFC has commissioned one independent review of its performance which was delivered to the Commission in February 2012 and a review of the Compliance Monitoring Scheme assessing CCM's compliance with their obligations The commissioning of a performance review is consistent with the approach adopted by other RFMOs and as recommended by the Kobe process. The Review Team comprised four external experts and three Commission members. The Review concluded that the WCPFC convention is closely aligned with the most recent standards in international fisheries management and that it reflects all key UNCLOS and the UNFSA requirements. At a national level within the WCPFC arrangements, the TCC reviews compliance performance with the implementation of WCPFC CMMs annually. The Office of the Auditor General conducted a performance audit of the MFMR in 2012 entitled *"Managing Sustainable Fisheries (Tuna Fishery) in Solomon Islands Fisheries Exclusive Economic Zone"* (OAG 2012). The objective of the audit was to assess the effectiveness of the management of off-shore fisheries (the tuna fishery) by Solomon Islands fisheries authorities in accordance with national fisheries policies and framework. The Audit found some deficiencies in arrangements at that time. In December 2014 following a review of Solomon Islands management arrangements, the European Commission issued a warning (a yellow card) under the European Union IUU regulations. The objective of the EU IUU Regulation is to prevent, deter and eliminate trade of fisheries products originating from IUU fishing activity and stop their access to the EU markets. Under the Regulations, non-EU countries are 'carded' by the EU when they fail to fight IUU fishing. A yellow card acts as a warning for the country that they need to improve their management and enforcement and compliance. Since then, the Solomon Islands has embarked on a series of reforms to bring its fisheries legal and administrative frameworks fully into line with international law, and is now well equipped to tackle these threats effectively. Working closely with the European		

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.
		Commission, they have strengthened their sanctioning system, and have improved monitoring and control of their fleets. The "yellow card" was lifted in February 2017. More recently, a review of MFMR has been undertaken and a reorganization is in progress (Ferral Lasi pers. comm.). Overall, considering regional and national arrangements, including the role of the Tuna Management and Development Plan as outlined in 3.2.4 SIa, there is evidence to suggest that the overall management system is subject to regular internal and occasional external review. As such SG 60 and SG 80 requirements are met. However, the management system is not subject to regular internal and external review, thus SG 100 is not met.
References		WCPFC Convention; Solomon Islands Fisheries Management Act 2015; Solomon Islands Tuna Management and Development Plan 2015; Office of the Auditor General Report 2012; EC Press Release available at https://ec.europa.eu/fisheries/fighting-illegal-fishing-commission-lifts-yellow-cards-curaçao-and-solomon-islands_en; Ferral Lasi pers. Comm.

OVERALL PERFORMANCE INDICATOR SCORE:	Score
CONDITION NUMBER (if relevant): Condition	80

Appendix 1.2 Risk Based Framework (RBF) Outputs

The RBF was not used in this assessment.

Appendix 1.3 Conditions

Table 23. Condition 1 Yellowfin tuna[17]	
Performance Indicator	**PI 1.2.1 (Scoring issue a) Harvest strategy design**
Score	PI score: 70
Rationale	See rationale for PI 1.2.1a: Evaluation Table for PI 1.2.1 Yellowfin tuna – Harvest strategy The general stock decline for yellowfin (albeit with a recent increase in stock size), the absence of agreed harvest control rules within WCPFC or PNA for any other tuna species, and the record of the Commission failing to reduce fishing mortality on bigeye tuna when it was thought to have been subject to overfishing, 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. It is also not clear that coherent management actions are applied throughout the range of the stock, particularly in Indonesia and the Philippines. Overall this prevents the conclusion that the strategy is designed to achieve stock management objectives. Yellowfin tuna is therefore considered to meet the SG 60 level of this scoring issue but not the SG 80 or SG 100 levels.
Condition	By the third 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 management objectives reflected in the target and limit reference points.
Milestones	The milestones reflect the updated Proposed Revisions to Harvest Strategy Work plan (WCPFC14-2017-DP27_rev2): **1. Year 1 (2020):** SC provide advice on potential Target Reference Points for yellowfin; Commission agree on a TRP for yellowfin. SC to provide advice on performance of candidate HCRs; Commission to consider advice on progress towards HCR. Score 70. **2. Year 2 (2021):** SC to provide advice on performance of candidate HCRs; TCC consider the implications of candidate HCRs; Commission consider advice on progress toward HCRs. Score 70. **3. Year 3 (2022):** same as year 2; adopt a HCR. Score 80. The WCPFC workplan ends in 2021. By then, the work towards a formal harvest strategy for yellowfin will be adopted; and a harvest strategy meeting the MSC SG80 requirements is required by Year 3.

[17] The Principle 1 milestones and timelines for the Solomon Islands longline fishery for Yellowfin and Albacore are harmonized with other MSC tuna fisheries in the WCPO. The milestones have been set one year after the WCPFC workplan so that the assessment team can review the outcomes of the Commission meetings held in December each year in the following year's audit.

Client action plan	Responsible Party/ies: **Year 1 (2020):** SC provide advice on potential Target Reference Points for yellowfin; Commission agree a TRP for yellowfin. SC to provide advice on performance of candidate HCRs; Commission to consider advice on progress towards HCR. Score 70.	
	Activities:	▪ TMI/NFD will actively support and advocate for the implementation of WCPFC's Harvest Strategy Workplan, which establishes a process and timeframes to adopt a harvest strategy for WCPO tuna stocks, including yellowfin (in line with WCPFC CMM 2014-16). ▪ TMI/NFD will actively support and advocate for Commission agreement on a target reference point for yellowfin and the development of potential candidate harvest control rules. ▪ TMI/NFD's support and advocacy will involve: - Participation in WCPFC meetings (i.e. SC/TCC/WCPFC), as part of the Solomon Islands' delegation. - Participation in working groups, workshops, trainings and forums relating to the development of harvest strategies. - Providing input (where required) and supporting relevant position statements/lobbying efforts of ISSF and IPNLF, and potentially other NGOs, relating to harvest strategies. ▪ MFMR will also advocate and support this condition being met through active participation in PNA, FFA and WCPFC initiatives/proposals regarding harvest strategies.
	Expected outcome:	Commission agreement on TRP for yellowfin
	Expected score:	70
	2. Year 2 (2021): SC to provide advice on performance of candidate HCRs; TCC consider the implications of candidate HCRs; Commission consider advice on progress toward HCRs,	
	Activities:	▪ TMI/NFD will actively support and advocate for the implementation of WCPFC's Harvest Strategy Workplan, which establishes a process and timeframes to adopt a harvest strategy for WCPO tuna stocks, including yellowfin (in line with WCPFC CMM 2014-16). ▪ TMI/NFD will actively support and advocate for the development of potential candidate harvest control rules. ▪ TMI/NFD's support and advocacy will involve: - Participation in WCPFC meetings (i.e. SC/TCC/WCPFC), as part of the Solomon Islands' delegation.

		- Participation in working groups, workshops, trainings and forums relating to the development of harvest strategies. - Providing input (where required) and supporting relevant position statements/lobbying efforts of ISSF and IPNLF, and potentially other NGOs, relating to harvest strategies. ▪ MFMR will also advocate and support this condition being met through active participation in PNA, FFA and WCPFC initiatives/proposals regarding harvest strategies.
	Expected outcome:	Develop harvest control rules and management strategy evaluation
	Expected score:	70
	3. Year 3 (2022): same as year 2; adopt a HCR.	
	Activities:	▪ TMI/NFD will actively support and advocate for the implementation of WCPFC's Harvest Strategy Workplan, which establishes a process and timeframes to adopt a harvest strategy for WCPO tuna stocks, including yellowfin (in line with WCPFC CMM 2014-16). ▪ TMI/NFD will actively support and advocate for the adoption of a harvest control rule and formal harvest strategy for yellowfin, which is responsive to the state of the stock and achieves management objectives reflected in the target and limit reference points. ▪ TMI/NFD's support and advocacy will involve: - Participation in WCPFC meetings (i.e. SC/TCC/WCPFC), as part of the Solomon Islands' delegation. - Participation in working groups, workshops, trainings and forums relating to the development of harvest strategies. - Providing input (where required) and supporting relevant position statements/lobbying efforts of ISSF and IPNLF, and potentially other NGOs, relating to harvest strategies. ▪ MFMR will also advocate and support this condition being met through active participation in PNA, FFA and WCPFC initiatives/proposals regarding harvest strategies.
	Expected outcome:	A formal harvest strategy for yellowfin is adopted which is responsive to the state of the stock and achieves management objectives reflected in the target and limit reference points.
	Expected score:	80

Consultation on condition	The client will consult with MFMR and other members within the Solomon Islands delegation, other WCPFC delegations, including FFA/PNA members, SPC, ISSF, IPNLF and environmental NGOs on harvest strategy-related matters.

Table 24. Condition 2. Yellowfin tuna		
Performance Indicator	**PI 1.2.2 Harvest control rules and tools**	
Score	PI score 60	
Rationale	See rationale for PI 1.2.2 a,b,c: Evaluation Table for PI 1.2.2 yellowfin tuna – Harvest control rules and tools	
Condition	SI a) By the third surveillance audit, demonstrate that well defined HCRs are in place for yellowfin tuna that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY. SI b) By the third surveillance audit, provide evidence that the selection of the harvest control rules for yellowfin tuna are robust to the main uncertainties. SI c) By the third surveillance audit, provide evidence that indicates that the tools in use for yellowfin tuna are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	
Milestones	As for Condition 1: The milestones reflect the updated Proposed Revisions to Harvest Strategy Work plan (WCPFC14-2017-DP27_rev2): **1. Year 1 (2020):** SC provide advice on potential Target Reference Points for yellowfin; Commission agree a TRP for yellowfin. SC to provide advice on performance of candidate HCRs; Commission to consider advice on progress towards HCR. Score 60. **2. Year 2 (2021):** SC to provide advice on performance of candidate HCRs; TCC consider the implications of candidate HCRs; Commission consider advice on progress toward HCRs. Score 60. **3. Year 3 (2022):** same as year 2; adopt a HCR. Score 80. The WCPFC workplan ends in 2021. By then, the work towards a formal harvest strategy for yellowfin will be adopted; a harvest strategy meeting the MSC SG80 requirements is required by Year 3.	
Client action plan	Responsible Party/ies: **Year 1 (2020):** SC provide advice on potential Target Reference Points for yellowfin; Commission agree a TRP for yellowfin. SC to provide advice on performance of candidate HCRs; Commission to consider advice on progress towards HCR. Score 70.	
	Activities:	▪ TMI/NFD will actively support and advocate for the implementation of WCPFC's Harvest Strategy Workplan, which establishes a process and timeframes to adopt a harvest strategy for WCPO tuna stocks, including yellowfin (in line with WCPFC CMM 2014-16). ▪ TMI/NFD will actively support and advocate for Commission agreement on a target reference point for yellowfin and the development of potential candidate harvest control rules. ▪ TMI/NFD's support and advocacy will involve:

		- Participation in WCPFC meetings (i.e. SC/TCC/WCPFC), as part of the Solomon Islands' delegation. - Participation in working groups, workshops, trainings and forums relating to the development of harvest strategies. - Providing input (where required) and supporting relevant position statements/lobbying efforts of ISSF and IPNLF, and potentially other NGOs, relating to harvest strategies. ▪ MFMR will also advocate and support this condition being met through active participation in PNA, FFA and WCPFC initiatives/proposals regarding harvest strategies.
	Expected outcome:	Commission agreement on a TRP for yellowfin
	Expected score:	60
	2. Year 2 (2021): SC to provide advice on performance of candidate HCRs; TCC consider the implications of candidate HCRs; Commission consider advice on progress toward HCRs,	
	Activities:	▪ TMI/NFD will actively support and advocate for the implementation of WCPFC's Harvest Strategy Workplan, which establishes a process and timeframes to adopt a harvest strategy for WCPO tuna stocks, including yellowfin (in line with WCPFC CMM 2014-16). ▪ TMI/NFD will actively support and advocate for the development of potential candidate harvest control rules. ▪ TMI/NFD's support and advocacy will involve: - Participation in WCPFC meetings (i.e. SC/TCC/WCPFC), as part of the Solomon Islands' delegation. - Participation in working groups, workshops, trainings and forums relating to the development of harvest strategies. - Providing input (where required) and supporting relevant position statements/lobbying efforts of ISSF and IPNLF, and potentially other NGOs, relating to harvest strategies. ▪ MFMR will also advocate and support this condition being met through active participation in PNA, FFA and WCPFC initiatives/proposals regarding harvest strategies.
	Expected outcome:	Develop harvest control rules and management strategy evaluation
	Expected score:	60

	3. Year 3 (2022): same as year 2; adopt a HCR.	
	Activities:	▪ TMI/NFD will actively support and advocate for the implementation of WCPFC's Harvest Strategy Workplan, which establishes a process and timeframes to adopt a harvest strategy for WCPO tuna stocks, including yellowfin (in line with WCPFC CMM 2014-16). ▪ TMI/NFD will actively support and advocate for the adoption of a harvest control rule and formal harvest strategy for yellowfin, which is responsive to the state of the stock and achieves management objectives reflected in the target and limit reference points. ▪ TMI/NFD's support and advocacy will involve: - Participation in WCPFC meetings (i.e. SC/TCC/WCPFC), as part of the Solomon Islands' delegation. - Participation in working groups, workshops, trainings and forums relating to the development of harvest strategies. - Providing input (where required) and supporting relevant position statements/lobbying efforts of ISSF and IPNLF, and potentially other NGOs, relating to harvest strategies. ▪ MFMR will also advocate and support this condition being met through active participation in PNA, FFA and WCPFC initiatives/proposals regarding harvest strategies.
	Expected outcome:	A formal harvest strategy for yellowfin is adopted which is responsive to the state of the stock and achieves management objectives reflected in the target and limit reference points.
	Expected score:	80
Consultation on condition	The client will consult with MFMR and other members within the Solomon Islands delegation, other WCPFC delegations, including FFA/PNA members, SPC, ISSF, IPNLF and environmental NGOs on harvest strategy-related matters.	

Table 25. Condition 3. Albacore tuna		
Performance Indicator	**PI 1.2.1 (Scoring issue a) Harvest strategy design**	
Score	PI score: 70	
Rationale	See rationale for PI 1.2.1a: Evaluation Table for PI 1.2.1 Albacore tuna – Harvest strategy	
Condition	By the third surveillance audit, demonstrate that the harvest strategy for albacore tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points	
Milestones	The milestones reflect the updated Proposed Revisions to Harvest Strategy Work plan (WCPFC14-2017-DP27_rev2): **1. Year 1 (2020):** Develop harvest control rules and Management strategy evaluation; SC provide advice on performance of candidate harvest control rule; TCC consider the implications of candidate harvest control rules; Commission consider advice on progress towards harvest control rules. Score 70. **2. Year 2 (2021):** Develop harvest control rules and Management strategy evaluation; SC provide advice on performance of candidate harvest control rules; TCC consider the implications of candidate harvest control rules; Commission consider advice on progress towards harvest control rules. Score 70. **3. Year 3 (2022):** same as year 2; adopt an HCR. Score 80. The WCPFC workplan ends in 2021. By then, the work towards a formal harvest strategy for albacore will be adopted; a harvest strategy meeting the MSC SG80 requirements is required by Year 3.	
Client action plan	Responsible Party/ies: **1. Year 1 (2020):** Develop harvest control rules and Management strategy evaluation; SC provide advice on performance of candidate harvest control rule; TCC consider the implications of candidate harvest control rules; Commission consider advice on progress towards harvest control rules.	
	Activities:	▪ TMI/NFD will actively support and advocate for the implementation of WCPFC's Harvest Strategy Workplan, which establishes a process and timeframes to adopt a harvest strategy for WCPO tuna stocks, including albacore (in line with WCPFC CMM 2014-16). ▪ TMI/NFD will actively support and advocate for the development of harvest control rules and management strategy evaluation for albacore ▪ TMI/NFD's support and advocacy will involve: - Participation in WCPFC meetings (i.e. SC/TCC/WCPFC), as part of the Solomon Islands' delegation. - Participation in working groups, workshops, trainings and forums relating to the development of harvest strategies.

		- Providing input (where required) and supporting relevant position statements/lobbying efforts of ISSF and IPNLF, and potentially other NGOs, relating to harvest strategies. ▪ MFMR will also advocate and support this condition being met through active participation in PNA, FFA and WCPFC initiatives/proposals regarding harvest strategies.
	Expected outcome:	Development of harvest control rules and management strategy evaluation for albacore
	Expected score:	70
	2. Year 2 (2021): Develop harvest control rules and Management strategy evaluation; SC provide advice on performance of candidate harvest control rules; TCC consider the implications of candidate harvest control rules; Commission consider advice on progress towards harvest control rules.	
	Activities:	▪ TMI/NFD will actively support and advocate for the implementation of WCPFC's Harvest Strategy Workplan, which establishes a process and timeframes to adopt a harvest strategy for WCPO tuna stocks, including yellowfin (in line with WCPFC CMM 2014-16). ▪ TMI/NFD will actively support and advocate for the development and adoption of harvest control rules and management strategy evaluation for albacore ▪ TMI/NFD's support and advocacy will involve: - Participation in WCPFC meetings (i.e. SC/TCC/WCPFC), as part of the Solomon Islands' delegation. - Participation in working groups, workshops, trainings and forums relating to the development of harvest strategies. - Providing input (where required) and supporting relevant position statements/lobbying efforts of ISSF and IPNLF, and potentially other NGOs, relating to harvest strategies. ▪ MFMR will also advocate and support this condition being met through active participation in PNA, FFA and WCPFC initiatives/proposals regarding harvest strategies.
	Expected outcome:	Development of harvest control rules and management strategy evaluation for albacore
	Expected score:	70
	3. Year 3 (2022): same as year 2; adopt a HCR. Score 80.	
	Activities:	▪ TMI/NFD will actively support and advocate for the implementation of WCPFC's Harvest Strategy Workplan, which establishes a process and timeframes to adopt a harvest

		strategy for WCPO tuna stocks, including yellowfin (in line with WCPFC CMM 2014-16). ▪ TMI/NFD will actively support and advocate for the adoption of a harvest control rule and formal harvest strategy for albacore, which is responsive to the state of the stock and achieves management objectives reflected in the target and limit reference points. ▪ TMI/NFD's support and advocacy will involve: - Participation in WCPFC meetings (i.e. SC/TCC/WCPFC), as part of the Solomon Islands' delegation. - Participation in working groups, workshops, trainings and forums relating to the development of harvest strategies. - Providing input (where required) and supporting relevant position statements/lobbying efforts of ISSF and IPNLF, and potentially other NGOs, relating to harvest strategies. ▪ MFMR will also advocate and support this condition being met through active participation in PNA, FFA and WCPFC initiatives/proposals regarding harvest strategies.
	Expected outcome:	Commission adopts a harvest control rule for albacore; a formal harvest strategy for yellowfin is adopted which is responsive to the state of the stock and achieves management objectives reflected in the target and limit reference points.
	Expected score:	80
Consultation on condition	The client will consult with MFMR and other members within the Solomon Islands delegation, other WCPFC delegations, including FFA/PNA members, SPC, ISSF, IPNLF and environmental NGOs on harvest strategy-related matters.	

Table 26. Condition 4. Albacore tuna		
Performance Indicator	**PI 1.2.2. Harvest control rules and tools**	
Score	PI score 60	
Rationale	See rationale for PI 1.2.2a, b, c: Evaluation Table for PI 1.2.2 albacore tuna – Harvest control rules and tools	
Condition	SI a) By the third surveillance audit, demonstrate that well defined HCRs are in place for albacore tuna that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY. SI b) By the third surveillance audit, provide evidence that the selection of the harvest control rules for albacore tuna are robust to the main uncertainties. SI c) By the third surveillance audit, provide evidence that indicates that the tools in use for albacore tuna are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	
Milestones	As for Condition 4: The milestones reflect the updated Proposed Revisions to Harvest Strategy Work plan (WCPFC14-2017-DP27_rev2): **1. Year 1 (2020):** Develop harvest control rules and Management strategy evaluation; SC provide advice on performance of candidate harvest control rule; TCC consider the implications of candidate harvest control rules; Commission consider advice on progress towards harvest control rules. Score 60. **2. Year 2 (2021):** Develop harvest control rules and Management strategy evaluation; SC provide advice on performance of candidate harvest control rules; TCC consider the implications of candidate harvest control rules; Commission consider advice on progress towards harvest control rules. Score 60. **3. Year 3 (2022):** same as year 2; adopt a HCR. Score 80. The WCPFC workplan ends in 2021. By then, the work towards a formal harvest strategy for albacore will be adopted; a harvest strategy meeting the MSC SG80 requirements is required by Year 3.	
Client action plan	Responsible Party/ies: **1. Year 1 (2020):** Develop harvest control rules and Management strategy evaluation; SC provide advice on performance of candidate harvest control rule; TCC consider the implications of candidate harvest control rules; Commission consider advice on progress towards harvest control rules.	
	Activities:	▪ TMI/NFD will actively support and advocate for the implementation of WCPFC's Harvest Strategy Workplan, which establishes a process and timeframes to adopt a harvest strategy for WCPO tuna stocks, including yellowfin (in line with WCPFC CMM 2014-16). ▪ TMI/NFD will actively support and advocate for the development of harvest control rules and management strategy evaluation for albacore. ▪ TMI/NFD's support and advocacy will involve:

		- Participation in WCPFC meetings (i.e. SC/TCC/WCPFC), as part of the Solomon Islands' delegation. - Participation in working groups, workshops, trainings and forums relating to the development of harvest strategies. - Providing input (where required) and supporting relevant position statements/lobbying efforts of ISSF and IPNLF, and potentially other NGOs, relating to harvest strategies. ▪ MFMR will also advocate and support this condition being met through active participation in PNA, FFA and WCPFC initiatives/proposals regarding harvest strategies.
	Expected outcome:	Development of harvest control rules and management strategy evaluation
	Expected score:	60
	2. Year 2 (2021): Develop harvest control rules and Management strategy evaluation; SC provide advice on performance of candidate harvest control rules; TCC consider the implications of candidate harvest control rules; Commission consider advice on progress towards harvest control rules.	
	Activities:	▪ TMI/NFD will actively support and advocate for the implementation of WCPFC's Harvest Strategy Workplan, which establishes a process and timeframes to adopt a harvest strategy for WCPO tuna stocks, including yellowfin (in line with WCPFC CMM 2014-16). ▪ TMI/NFD will actively support and advocate for the development of harvest control rules and management strategy evaluation for albacore. ▪ TMI/NFD's support and advocacy will involve: - Participation in WCPFC meetings (i.e. SC/TCC/WCPFC), as part of the Solomon Islands' delegation. - Participation in working groups, workshops, trainings and forums relating to the development of harvest strategies. - Providing input (where required) and supporting relevant position statements/lobbying efforts of ISSF and IPNLF, and potentially other NGOs, relating to harvest strategies. ▪ MFMR will also advocate and support this condition being met through active participation in PNA, FFA and WCPFC initiatives/proposals regarding harvest strategies.

	Expected outcome:	Development of harvest control rules and management strategy evaluation
	Expected score:	60
	3. Year 3 (2022): same as year 2; adopt a HCR. Score 80.	
	Activities:	▪ TMI/NFD will actively support and advocate for the implementation of WCPFC's Harvest Strategy Workplan, which establishes a process and timeframes to adopt a harvest strategy for WCPO tuna stocks, including yellowfin (in line with WCPFC CMM 2014-16). ▪ TMI/NFD will actively support and advocate for the adoption of a harvest control rule and formal harvest strategy for albacore, which is responsive to the state of the stock and achieves management objectives reflected in the target and limit reference points. ▪ TMI/NFD's support and advocacy will involve: - Participation in WCPFC meetings (i.e. SC/TCC/WCPFC), as part of the Solomon Islands' delegation. - Participation in working groups, workshops, trainings and forums relating to the development of harvest strategies. - Providing input (where required) and supporting relevant position statements/lobbying efforts of ISSF and IPNLF, and potentially other NGOs, relating to harvest strategies. - MFMR will also advocate and support this condition being met through active participation in PNA, FFA and WCPFC initiatives/proposals regarding harvest strategies.
	Expected outcome:	Commission adopts a harvest control rule for albacore; a formal harvest strategy for yellowfin is adopted which is responsive to the state of the stock and achieves management objectives reflected in the target and limit reference points.
	Expected score:	80
Consultation on condition	The client will consult with MFMR and other members within the Solomon Islands delegation, other WCPFC delegations, including FFA/PNA members, SPC, ISSF, IPNLF and environmental NGOs on harvest strategy-related matters.	

Table 27. Condition 5 For both yellowfin and albacore	
Performance Indicator	**PI 2.2.1 (scoring issue a). Main secondary species stock status**
Score	60
Rationale	There are no main secondary species other than the bait used in the fishery (see Table 10, Table 11, Table 12). Main secondary - Bait As outlined in Section 3.4.5 the fishery is thought to use mainly Goldstripe sardinella as bait, which in 2016 and 2017 accounted for approximately 30% of the average total catch (including landings, discards and bait). Several stock assessments have been conducted for the species in regions throughout its range (Sanders and Kedidi, 1984; Bennett et al., 1992). No species-specific management measures exist for this species (Hoare, 2016). In 2016, 186,980 t were caught worldwide, with the largest catches coming from Indonesia (FAO, 2018). While the client reported that the bait is sourced from China, the country of origin of the bait catch is unknown. Assuming that all bait used is exclusively Goldstripe sardinella, the quantity of bait used by the UoA represents an inconsequential proportion of the total catch (<1%), given that the total annual catches of Goldstripe sardinella are above 150,000 t (FAO, 2018). Therefore, given the small proportion of the catch used by the UoA, continued use of Goldstripe sardinella as a bait species would not be a threat to the sustainability or hinder recovery and rebuilding of the speices. However, given the uncertainty around the species involved, their source fisheries, and the status of the stocks targeted by these fisheries, we do not consider such a conclusion to be highly likely. We therefore do not consider the SG 80 requirements to be met for bait. GSA3.1.8 requires that, when assessing the impact of a UoA on Principle 2 species, this should include both observed and unobserved fishing mortality, where unobserved mortality may include IUU fishing, animals that may die after encountering fishing gear that may not be recorded and mortality that may result from lost fishing gear that continues to fish (ghost fishing). We are unable to assess the likely level of unobserved mortality for the source fishery for bait, except that we would in principle consider that ghost fishing would be minimal for purse seine gear that is usually used to capture small pelagic species.
Condition	By the fourth surveillance audit provide evidence that bait species classified as main used in the fishery are highly likely to be above biologically based limits OR 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.
Milestones	1. **Surveillance 1 (2020):** By the first surveillance, develop and provide a plan to estimate the species, quantity, and source fisheries to allow the determination of whether the species used as bait for the UoA vessels are within biologically based limits or, 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. Score 60.

	2. **Surveillance 2 (2021):** By the second surveillance, provide information on species and quantities of bait used by the UoA to allow the determination of whether the species used as bait for the UoA vessels are within biologically based limits or, 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. In addition, determine the bait species contribution to total bait use and allocate these Species into primary, secondary and main or minor. Score 60. 3. **Surveillance 3 (2022):** By the third surveillance, provide information on species, quantities and source fisheries for species of bait classified as main to allow the determination of whether the species used as bait for the UoA vessels are within biologically based limits or, 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. Score 60. 4. **Surveillance 4 (2023):** By the fourth surveillance, provide evidence that the bait species classified as main are highly likely to be above biologically based limits or, 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. Score 80.	
Client action plan	Responsible Party/ies: 1. **Surveillance 1 (2020):** By the first surveillance, develop and provide a plan to estimate the species, quantity, and source fisheries to allow the determination of whether the species used as bait for the UoA vessels are within biologically based limits or, 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.	
	Activities:	▪ Develop a bait data collection plan covering: - Systematic collection of data on bait used by fishing vessels (species, quantity, bait supplier, country of origin) - Inclusion of common name and full scientific name (genus and species) and country of origin in bait suppliers' commercial invoices. ▪ Inform all vessel owners/captains and bait suppliers on new bait data collection requirements. ▪ Implement bait data collection requirements. Establish a database for recording all bait data collected.
	Expected outcome:	Bait data collection plan developed and implemented by NFD, vessel owners and bait suppliers; database established for recording bait data.
	Expected score:	60
	2. **Surveillance 2 (2021):** By the second surveillance, provide information on species, quantities and source fisheries of bait used by the UoA.	
	Activities:	▪ Ongoing bait data collection from NFD, vessel owners and bait suppliers.

		▪ NFD will provide a minimum of 12-months' data on species, quantities and source fisheries of bait used by the UoA to determine which bait species are classified as 'main secondary'.
	Expected outcome:	Adequate bait information provided to determine 'main secondary' species and source fisheries.
	Expected score:	60
	3. **Surveillance 3 (2022):** By the third surveillance, provide information on classified as main to allow the determination of whether the species used as bait for the UoA vessels are within biologically based limits or, 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.	
	Activities:	▪ Ongoing bait data collection from NFD, vessel owners and bait suppliers. ▪ Collect available information on source fisheries of 'main secondary' bait species to assess if species used are within biologically based limits.
	Expected outcome:	Information collected to determine if 'main secondary' bait species used are within biologically based limits.
	Expected score:	60
	4. **Surveillance 4 (2023):** By the fourth surveillance, provide evidence that the bait species classified as main are highly likely to be above biologically based limits or, 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.	
	Activities:	▪ Ongoing bait data collection from NFD, vessel owners and bait suppliers. ▪ Collect available information on source fisheries of 'main secondary' bait species to assess if species used are within biologically based limits and if not, assess for evidence of recovery or a demonstrably effective partial strategy in place.
	Expected outcome:	Evidence provided that bait species classified as main are highly likely to be above biologically based limits, or, if below, there is evidence of recovery or a demonstrably effective partial strategy in place to ensure the UoA does not hinder recovery or rebuilding.
	Expected score:	80
Consultation on condition	The client will consult with vessels owners/captains and bait suppliers to effectively implement the bait data collection plan and obtain detailed information on bait species, volumes and source fisheries.	

Table 28. Condition 6. For both yellowfin and albacore	
Performance Indicator	**PI 2.2.2 (scoring issue a). Main secondary species management strategy**
Score	75
Rationale	There are no main secondary species other than the bait used in the fishery (see Section 3.4.3). Main secondary - Bait For the UoA, the number of vessels in the fishery are limited, the quantity of bait used is monitored and, as noted under PI 2.2.1 above, this amount represents a small proportion of the total catch from the likely source of this bait. These are considered to be measures that are in place that would be expected to ensure that the UoA has minimal impact on the source of the bait. We are not able to comment on the measures that are in place for the presumed bait fishery itself. The uncertainty over the source of bait, and the management of the presumed bait fishery, means that we do not have sufficient evidence to demonstrate that there is even a partial strategy in place that would be expected to maintain the bait species at a level which is highly likely to be within biologically-based limits. This meets the requirements of the SG 60 level but not of the SG 80 level.
Condition	By the fourth surveillance audit, provide evidence that there is a partial strategy in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of bait species classified as main at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.
Milestones	1. **Surveillance 1 (2020):** By the first surveillance, develop and provide a plan to estimate the species, quantity, and source fisheries to allow the determination of whether the species used as bait for the UoA vessels are within biologically based limits or, 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. Score 75. 2. **Surveillance 2 (2021):** By the second surveillance, provide information on <u>species and quantities of bait used by the UoA</u> to allow the determination of whether the species used as bait for the UoA vessels are within biologically based limits or, 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. In addition, determine the bait species contribution to total bait use and allocate these Species into primary, secondary and main or minor. Score 75. 3. **Surveillance 3 (2022):** By the third surveillance, provide information on <u>species, quantities and source fisheries</u> for species of bait classified as main to allow the determination of whether the species used as bait for the UoA vessels are within biologically based limits or, 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. Score 75. 4. **Surveillance 4 (2023):** By the fourth surveillance, provide evidence that the bait <u>species classified as main</u> are highly likely to be above biologically based limits or, 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. Score 80.
Client Action Plan	**Refer to Client Action Plan specified for Condition 5.**
Consultation on condition	The client will consult with vessels owners/captains and bait suppliers to effectively implement the bait data collection plan and obtain detailed information on bait species, volumes and source fisheries.

Table 29. Condition 7. For both yellowfin and albacore	
Performance Indicator	**PI 2.2.3 (scoring issues a and c) Main secondary species information**
Score	60
Rationale	There are no main secondary species other than the bait used in the fishery (see Section 3.4.3). Main secondary - Bait Scoring issue a: There is qualitative information available on the quantity of bait purchased and used by the UoA fishery in addition to bait provenance. The quantity of bait purchased was calculated by estimating the average weight of bait per hook and multiplying this by the total number of hooks used by the UoA annually. These results suggest that the total removals in the presumed bait fishery are minimal (400-800t) and the impact of the UoA on the source bait populations is likely to be small. Only qualitative information is available for bait provenance so it is not possible to assess the impact of the bait used on the status of the source populations. This meets the requirements of the SG 60 but not the SG 80 . Scoring issue c: As outlined in PI 2.2.2, there are considered to be measures in place for bait but not a partial strategy. The information available could also not be considered to be currently sufficient to support a partial strategy, given the lack of knowledge about the species and sources of bait used. This meets the requirements of the SG 60 level but not of the SG 80 level.
Condition	By the fourth surveillance audit, provide evidence that the available information is adequate to support a partial strategy to manage bait species classified as main.
Milestones	1. **Surveillance 1 (2020):** By the first surveillance, develop and provide a plan to estimate the species, quantity, and source fisheries to allow the determination of whether the species used as bait for the UoA vessels are within biologically based limits or, 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. Score 60. 2. **Surveillance 2 (2021):** By the second surveillance, provide information on <u>species and quantities of bait used by the UoA</u> to allow the determination of whether the species used as bait for the UoA vessels are within biologically based limits or, 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. In addition, determine the bait species contribution to total bait use and allocate these Species into primary, secondary and main or minor. Score 60. 3. **Surveillance 3 (2022):** By the third surveillance, provide information on <u>species, quantities and source fisheries</u> for species of bait classified as main to allow the determination of whether the species used as bait for the UoA vessels are within biologically based limits or, 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. Score 60. 4. **Surveillance 4 (2023):** By the fourth surveillance, provide evidence that the bait <u>species classified as main</u> are highly likely to be above biologically based limits or, 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. Score 80.
Client Action Plan	**Refer to Client Action Plan specified for Condition 5.**
Consultation on condition	The client will consult with vessels owners/captains and bait suppliers to effectively implement the bait data collection plan and obtain detailed information on bait species, volumes and source fisheries.

Table 30. Condition 8. For both yellowfin and albacore		
Performance Indicator	**PI 2.3.2 ETP species management strategy**	
Score	75	
Rationale	See rationale for PI 2.3.2 (Scoring issue d): Evaluation Table for PI 2.3.2 yellowfin tuna and albacore tuna – ETP species management strategy All elements Although the port inspections, which check for compliance with the zero retention and gear requirements, are useful they do not provide evidence of practices at sea. The very low levels of observer coverage mean that there is limited information about the level of interaction with all ETP species by UoA vessels and about their compliance with requirements for the safe release of any captured sharks and turtles. Trials of electronic monitoring approaches have demonstrated its potential to provide such evidence in the future but this technology is yet to be fully implemented for this purpose.	
Condition	By the fourth surveillance audit, provide evidence that the measures/strategy for ETP species are being implemented successfully.	
Milestones	1. **Surveillance 1 (2020):** By the first year, develop a plan for the evaluation of options for providing evidence that measures are being implemented successfully on UoA vessels. Score 75. 2. **Surveillance 2 (2021):** By the second year, trial a preferred option or options for providing evidence that measures are being implemented successfully on UoA vessels. Score 75. 3. **Surveillance 3 (2022):** By the third year, evaluate the performance of the trialed option or options and adopt the option which will provide evidence that measures are being implemented successfully on UoA vessels. Score 75 4. **Surveillance 4 (2023):** By the fourth year provide evidence that the measures/strategy for ETP species are being implemented successfully across UoA vessels. Score 80.	
Client action plan	Responsible Party/ies: **1. Surveillance 1 (2020):** By the first year, develop a plan for the evaluation of options for providing evidence that measures are being implemented successfully on UoA vessels.	
	Activities:	▪ MFMR and NFD to collaboratively develop a plan to identify and evaluate options for improved at sea monitoring of interactions with ETP species and compliance with requirements for the safe release of captured sharks and turtles. ▪ NFD to facilitate training of vessels in best-practice by-catch handling techniques.
	Expected outcome:	Plan developed to identify and evaluation options for improved at sea monitoring; UoA vessels trained in best-practice by-catch handling techniques.
	Expected score:	75
	2. Surveillance 1 (2020): By the first year, develop a plan for the evaluation of options for providing evidence that measures are being implemented successfully on UoA vessels.	
	Activities:	NFD and MFMR to collaborate with vessel owners to trial possible options for providing evidence of compliance at sea with measures

		relating to ETP interactions/safe-handling of captured sharks and turtles on selected UoA vessels.
	Expected outcome:	Trials of options for at sea monitoring conducted on selected UoA vessels.
	Expected score:	75
	3. Surveillance 3 (2022): By the third year, evaluate the performance of the trialed option or options and adopt the option which will provide evidence that measures are being implemented successfully on UoA vessels.	
	Activities:	NFD and MFMR to evaluate options trialed to identify the most suitable option/s that will provide evidence of compliance at sea with measures relating to ETP/safe-handling of captured sharks and turtles on selected UoA vessels; adopt an option for roll-out on UoA vessels.
	Expected outcome:	Adoption of the most suitable trialled option for roll-out on UoA vessels.
	Expected score:	75
	4. Surveillance 4 (2023): By the fourth year provide evidence that the measures/strategy for ETP species are being implemented successfully across UoA vessels.	
	Activities:	Roll-out selected at sea monitoring option/s on UoA vessels.
	Expected outcome:	Evidence provided through at sea monitoring option/s adopted that the measures/strategy for ETP species are being implemented across UoA vessels.
	Expected score:	80
Consultation on condition	The client will consult with MFMR, fishing vessel owners/captains and, as/if required, fisheries compliance experts and technology providers for at sea monitoring.	

Table 31. Condition 9. For both yellowfin and albacore	
Performance Indicator	**PI 2.3.3 ETP species information**
Score	60
Rationale	See evaluation table for PI 2.3.3, scoring issues a and c.
Condition	SI a) By the fourth surveillance audit, provide evidence that 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. SI b) By the fourth surveillance audit, provide evidence that information is adequate to measure trends and support a strategy to manage impacts on ETP species.
Milestones	1. **Surveillance 1 (2020):** By the first year, develop a plan for the evaluation of options for providing evidence that measures are being implemented successfully on UoA vessels. Score 75. 2. **Surveillance 2 (2021):** By the second year, trial a preferred option or options for providing evidence that measures are being implemented successfully on UoA vessels. Score 75. 3. **Surveillance 3 (2022):** By the third year, evaluate the performance of the trialed option or options and adopt the option which will provide evidence that measures are being implemented successfully on UoA vessels. Score 75 4. **Surveillance 4 (2023):** By the fourth year provide evidence that the measures/strategy for ETP species are being implemented successfully across UoA vessels. Score 80.
Client Action Plan	**Refer to Client Action Plan specified for Condition 8.**
Consultation on condition	**The client will consult with vessels owners/captains and bait suppliers to effectively implement the bait data collection plan and obtain detailed information on bait species, volumes and source fisheries.**

Table 32. Condition 10. For both yellowfin and albacore		
Performance Indicator	**PI 3.1.2 Management system, consultation and roles and responsibilities**	
Score	75	
Rationale	See rationale for SI b PI 3.1.2 -- Management system, consultation and roles and responsibilities The arrangements spelled out in the Fisheries Management Act 2015, the Tuna Management and Development Plan and the opportunity for stakeholder input to regional (PNA and WCPFC) management decisions provide a system which enables relevant local knowledge to be introduced into the management system. However, the FAC has not met since 2015 with the MFMR advising that it is currently in process of appointing new members. The TIASI has met more regularly with the MFMR however it is unclear the extent to which bilateral discussions provide input to the management system. As such SG60 requirements are met, however SG80 and SG 100 are not.	
Condition	By the fourth surveillance audit, provide evidence that the management system includes consultation processes that regularly seek and accept relevant information from a range of sources, including local knowledge. Additionally, that the national management system demonstrates consideration of the information obtained.	
Milestones	1. **Surveillance 1 (2020):** By the first surveillance audit, work with MFMR to develop a basic proposal/plan for improvement of the consultation processes, to ensure the condition is closed by the 4th year of certification. The Plan should identify: consultation mechanisms, which sources/parties will be involved in the consultation processes and the frequency with which the consultation processes will seek and accept information. Score 75 2. **Surveillance 2 (2021):** By the second surveillance audit, demonstrate initial steps to implement proposed improvements to the consultative processes and ensure inclusion of a range sources/parties identified in the proposal/plan for improvements developed during the first-year audit are occurring. Score 75 3. **Surveillance 3 (2022):** By the third surveillance audit, demonstrate implementation of consultation processes from a range of sources and that this information is being considered by the management system at both the national and regional levels. Score 75 4. **Surveillance 4 (2023):** By the fourth surveillance audit, be able to demonstrate ongoing consultation through implementation of consultation processes from a range of stakeholders and that this information is being considered by the management system at both the national and regional levels. Score 80	
Client action plan	Responsible Party/ies: **1. Surveillance 1 (2020):** By the first surveillance audit, work with MFMR to develop a basic proposal/plan for improvement of the consultation processes, to ensure the condition is closed by the 4th year of certification. The Plan should identify: consultation mechanisms, which sources/parties will be involved in the consultation processes and the frequency with which the consultation processes will seek and accept information.	
	Activities:	▪ Tri Marine/NFD will advocate and support MFMR in the development of a plan to improve current consultation processes, such that consultation mechanisms laid out in the Fisheries Management Act 2015 and National Tuna

		Management Plan 2015 (or later revisions) are adequately applied. ▪ Tri Marine/NFD's support and advocacy will be through direct liaison and cooperation with MFMR, participation as an active member of the Tuna Industry Association of Solomon Islands (TIASI), and in turn, through TIASI's representation on the Fisheries Advisory Council (FAC).
	Expected outcome:	Consultation plan developed by MFMR.
	Expected score:	75
	2. Surveillance 2 (2021): By the second surveillance audit, demonstrate initial steps to implement proposed improvements to the consultative processes and ensure inclusion of a range sources/parties identified in the proposal/plan for improvements developed during the first year audit are occurring.	
	Activities:	▪ Tri Marine/NFD will advocate and support MFMR in efforts to improve current consultation processes, such that consultation mechanisms laid out in the Fisheries Management Act 2015 and National Tuna Management Plan 2015 (or later revisions) are adequately applied. ▪ Tri Marine/NFD's support and advocacy will be through direct liaison and cooperation with MFMR, participation as an active member of the Tuna Industry Association of Solomon Islands (TIASI), and in turn, through TIASI's representation on the Fisheries Advisory Council (FAC).
	Expected outcome:	FAC will re-convene; TIASI will meet regularly; comprehensive meeting minutes from FAC/TIASI/MFMR-NFD bilateral meetings will demonstrate inclusion of a range of sources/parties involved in consultation processes.
	Expected score:	75
	3. Surveillance 3 (2022): By the third surveillance audit, demonstrate implementation of consultation processes from a range of sources and that this information is being considered by the management system at both the national and regional levels.	
	Activities:	▪ Tri Marine/NFD will advocate and support MFMR in efforts to improve current consultation processes, such that consultation mechanisms laid out in the Fisheries Management Act 2015 and National Tuna Management Plan 2015 (or later revisions) are adequately applied. ▪ Tri Marine/NFD will advocate and support continued MFMR engagement in regional management forums (i.e. PNA/FFA/WCPFC). ▪ Tri Marine/NFD's support and advocacy will be through direct liaison and cooperation with MFMR, participation as an active member of the Tuna Industry Association of Solomon Islands (TIASI), and in turn, through TIASI's representation on the Fisheries Advisory Council (FAC).
	Expected outcome:	Regular consultations being held, producing information from a range of sources which is being considered by the management system at the national/regional levels.
	Expected score:	75

	4. Surveillance 4 (2023): By the fourth surveillance audit, be able to demonstrate ongoing consultation through implementation of consultation processes from a range of stakeholders and that this information is being considered by the management system at both the national and regional levels.	
	Activities:	▪ Tri Marine/NFD will advocate and support MFMR in efforts to improve current consultation processes, such that consultation mechanisms laid out in the Fisheries Management Act 2015 and National Tuna Management Plan 2015 (or later revisions) are adequately applied. ▪ Tri Marine/NFD will advocate and support continued MFMR engagement in regional management forums (i.e. PNA/FFA/WCPFC). ▪ Tri Marine/NFD's support and advocacy will be through direct liaison and cooperation with MFMR, participation as an active member of the Tuna Industry Association of Solomon Islands (TIASI), and in turn, through TIASI's representation on the Fisheries Advisory Council (FAC).
	Expected outcome:	Regular consultations being held, producing information from a range of sources which is being considered by the management system at the national/regional levels.
	Expected score:	80
Consultation on condition	The client will consult with MFMR and TIASI.	

Table 33. Condition 11. For both yellowfin and albacore	
Performance Indicator	**3.2.2 Management system decision making processes aimed at achieving objectives**
Score	75
Rationale	See rationale for SI b 3.2.2 – Responsiveness of decision-making processes While settled regional and sub-regional arrangements exist for this SI, it is less clear how effective these arrangements are at the domestic level. MFMR staff are required to manage the fishery in accordance with the provisions of the Act, however the level of broader stakeholder consultation and the timeliness of input to local and regional serious and other important issues is unclear. This is partly due to the fact that a significant consultative mechanism, the FAC has not met since October 2014. There have been bilateral meetings between MFMR and the four companies operating in the UoA (they meet annually to discuss management arrangements and their annual MoUs and license conditions) and also between MFMR and the TIASI. However, no evidence was provided that these meetings deal specifically with relevant research, monitoring, evaluation and consultation in a transparent, timely and adaptive manner. As such, SG 60 requirements are met, however SG 80 and SG 100 requirements are not met. See rationale for SI d 3.2.2 - Accountability and transparency of management and decision-making process. Overall, SG 60 and SG 80 requirements are met for the WCPFC however, not all information is publicly available (National Part 2 Reports) and information is not comprehensive for all elements of the management system or available to all interested stakeholders, therefore SG100 is not met. For the Solomon Islands, due to a lack of evidence, it is unclear whether the arrangements set out in the TMDP are in fact being implemented. The Plan states that "Information on fishery performance and management action is available on request, and explanations are provided to the Tuna Industry Association of the Solomon Islands (TIASI) for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring evaluation and review activity". Evidence was not provided to the extent to which this information has either been sought by the TIASI or provided to them. As such SG 60 requirements are met, however SG 80 and SG 100 requirements are not met.
Condition	SI b) By the fourth surveillance audit, provide evidence that 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. SI d) By the fourth surveillance audit, provide evidence that 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.
Milestones	1. **Surveillance 1 (2020):** By the first surveillance audit, work with MFMR to develop a proposal to improve decision making processes such that they respond to important issues in a transparent, timely and adaptive manner and take account of the wider implications of decisions. Ensure the plan improves the flow of information on the

	fishery's performance and management actions. The plan should identify: who will assess fishery performance, how frequently this will occur, how this information will be transmitted and to whom and what actions will be taken to address deficiencies. Overall, the plan should identify ways to improve input from all sources and how best to assess the wider implications of decisions. Score 75 2. **Surveillance 2 (2021):** By the second surveillance audit, demonstrate initial steps to implement proposed improvements to the decision-making processes so as to ensure inclusion of the input from research, monitoring, evaluation and consultation, and initial steps for development of assessment processes and dissemination of information. Score 75 3. **Surveillance 3 (2022):** By the third surveillance audit, demonstrate implementation of revised decision-making processes with input from a range of sources and that the wider implications of decisions are being considered. Also, demonstrate the plan has been implemented and information on the fishery's performance and management action is available on request. Score 75 4. **Surveillance 4 (2023):** By the fourth surveillance audit, be able to demonstrate decision-making processes are responding 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. Also, provide evidence that information on the fishery's performance and management action are available on request and that explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity. Score 80
Client action plan	Responsible Party/ies: **Surveillance 1 (2020):** By the first surveillance audit, work with MFMR to develop a proposal to improve decision making processes such that they respond to important issues in a transparent, timely and adaptive manner and take account of the wider implications of decisions. Ensure the plan improves the flow of information on the fishery's performance and management actions. The plan should identify: who will assess fishery performance, how frequently this will occur, how this information will be transmitted and to whom and what actions will be taken to address deficiencies. Overall, the plan should identify ways to improve input from all sources and how best to assess the wider implications of decisions.
	Activities: ▪ Tri Marine/NFD will advocate and support MFMR in the development of a plan to improve national-level decision making processes. ▪ Tri Marine/NFD's support and advocacy will be through direct liaison and cooperation with MFMR, participation as an active member of the Tuna Industry Association of Solomon Islands (TIASI), and in turn, through TIASI's representation on the Fisheries Advisory Council (FAC).
	Expected outcome: MFMR has developed a plan to improve national-level decision making processes.
	Expected score: 75
	2. Surveillance 2 (2021): By the second surveillance audit, demonstrate initial steps to implement proposed improvements to the decision-making processes so as to ensure inclusion of the input from research, monitoring, evaluation and consultation, and initial steps for development of assessment processes and dissemination of information.

	Activities:	▪ Tri Marine/NFD will advocate and support MFMR in the initial implementation of the plan to improve national-level decision making processes. ▪ Tri Marine/NFD's support and advocacy will be through direct liaison and cooperation with MFMR, participation as an active member of the Tuna Industry Association of Solomon Islands (TIASI), and in turn, through TIASI's representation on the Fisheries Advisory Council (FAC).
	Expected outcome:	MFMR has commenced the implementation of the plan to improve national-level decision making processes.
	Expected score:	75
	3. Surveillance 3 (2022): By the third surveillance audit, demonstrate implementation of revised decision-making processes with input from a range of sources and that the wider implications of decisions are being considered. Also, demonstrate the plan has been implemented and information on the fishery's performance and management action is available on request.	
	Activities:	▪ Tri Marine/NFD will advocate and support MFMR in the ongoing implementation of the plan to improve national-level decision making processes. ▪ Tri Marine/NFD's support and advocacy will be through direct liaison and cooperation with MFMR, participation as an active member of the Tuna Industry Association of Solomon Islands (TIASI), and in turn, through TIASI's representation on the Fisheries Advisory Council (FAC).
	Expected outcome:	MFMR has implemented revised decision-making processes with input from a range of sources and wider implications of decisions also being considered, with information on the fishery's performance and management action available on request.
	Expected score:	75
	4. Surveillance 4 (2023): By the fourth surveillance audit, be able to demonstrate decision-making processes are responding 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. Also, provide evidence that information on the fishery's performance and management action are available on request and that explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	
	Activities:	▪ Tri Marine/NFD will advocate and support MFMR in the ongoing implementation of the plan to improve national-level decision making processes. ▪ Tri Marine/NFD's support and advocacy will be through direct liaison and cooperation with MFMR, participation as an active member of the Tuna Industry Association of Solomon Islands (TIASI), and in turn, through TIASI's representation on the Fisheries Advisory Council (FAC).

	Expected outcome:	MFMR is implementing decision-making processes that 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. Information on the fishery's performance and management action are 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.
	Expected score:	80
Consultation on condition	The client will consult with MFMR and TIASI.	

Letters of Support

Letter of Support from Solomon Islands Fisheries Agency (MFMR)

Solomon Islands Government

MINISTRY OF FISHERIES AND MARINE RESOURCES

Tel: (677)39143
Fax: (677)38730
Solomon Islands
Email: plusi@fisheries.gov.sb

Kukum Highway
P.O. Box G2, Honiara

Date; 02nd August 2019

TO WHOM IT MAY CONCERN

SUPPORT FOR MSC CERTIFICATION OF THE SOLOMON ISLANDS LONGLINE FISHERY SOUGHT BY NATIONAL FISHERIES DEVELOPMENTS LTD.

The Ministry of Fisheries and Marine Resources (MFMR) fully support the efforts by National Fisheries Developments Ltd. (NFD), the client group, to pursue MSC certification for vessels chartered to it operating within the Solomon Islands Longline Fishery.

MFMR is committed to assist the client group, if the fishery passes MSC Assessment, in implementing the respective Conditions of Certification. MFMR is therefore committed to implementing the activities in the Assessment's Client Action Plan.

Sincerely,

Patteson Lusi
PERMANENT SECRETARY (ACTING)

Appendix 2 Peer Review Reports

Table 34 Peer Review Response A—General

Question	Yes/No	**Peer Reviewer Justification (as given at initial Peer Review stage).** Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI and RBF tables.	**CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)**
Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	No	Overall, the report is detailed, very clear and a substantial body of evidence is provided. There are some areas where the justification text needs amending (e.g. Yellowfin 1.2.1 f, 2.4.3 b, 2.4.3 c and 2.5.3 d, where justification is provided for a purse seine fishery without indicating how this is relevant to the longline fishery under assessment). In this reviewer's view, the background information (which is extensive) could be drawn on more heavily to justify scores (e.g., CMM 2008-03 is raised in the purse seine context in the background on p. 79 but not referred to in terms of the longline method or any actions taken by the UoCs in the appropriate scoring sections), and the justification could be more closely aligned with what is being assessed by the scoring issues (e.g. assessing the nature and utility of the information available, as a separate consideration to the management or outcome states observed). It would be helpful to clarify in the scoring tables on when scoring of an element was not required (i.e. due to MSC procedures/requirements) and when the findings of scoring were 'No'. (The current use of "Not scored" in some places is unclear in this regard). The descriptions in the report of how MSC requirements and guidance have been applied by the team in conducting their assessment are expected to be very helpful for readers who may be less familiar with MSC procedures. The summary scoring tables provided are similarly helpful.	Further justification has been added to Principle 1 and information that was included about purse-seine has been removed.

Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.1, 7.18.1 and sub-clauses]	Yes	Conditions are clearly written and timeframes are appropriate. The reviewer notes linkages that are required due to the harmonisation of MSC certifications for highly migratory species fisheries, and that the authors note (on p. 238 in Appendix 1.3 of this report) their intent for Conditions 1 - 4 to be consistent with those timeframes.	These have been addressed.
Is the client action plan clear and sufficient to close the conditions raised? [Reference FCR v2.0, 7.11.2-7.11.3 and sub-clauses]	Yes	No additional comments.	
Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?		N/A	

Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary)	N/A	The reviewer commends the assessment team on producing a detailed and highly readable report and provides the following suggestions: - it is not always clear that there are two sets of vessel arrangements in place - i.e., the bilateral arrangements for Fijian vessels and the charter arrangements for the other vessels (e.g. section 3.1.1 p13). - additional information about non-target and ETP species is available in the report on the EM work conducted on longline vessels fishing within the Solomons EEZ (Hosken et al. 2016: http://eminformation.com/wp-content/uploads/2016/09/Report-on-2014-Solomon-Islands-Longline-E-Monitoring-Project.pdf). - the Filippi et al. (2010) reference could be updated with Waugh et al. 2012: https://www.dragonfly.co.nz/publications/pdf/Waughetal_2012_seabird-risk-longlines.pdf - CMM 2008-03 for marine turtles will be superseded by CMM 2018-04 on 1 January 2020. - check the references to Tremblay-Boyer throughout (these currently often show as Tremblayer-Boyer). - resolve bookmarking issues in contents page.	The bilateral arrangements and the charter arrangements are effectively the same as the vessels under consideration of the UoA operate exclusively within the Solomon Islands EEZ and this is the management authority of significance (i.e. Fijian vessels are adhering to the same requirements as vessels under charter agreements). References have been corrected regarding incorrect spelling/correct CMM. Bookmarking issue has been resolved.

Table 35 Peer Review Response A—PI Specific

Peer Review A—Peer Review

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	PI Information	PI Scoring	PI Condition	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Res-ponse Code
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin	Longline	PR A	1.1.1	Yes	Yes	NA	Scoring agreed. The management advice issued by WCPFC could also be referred to: https://www.wcpfc.int/doc/02/yellowfin-tuna		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Albacore	Longline	PR A	1.1.1	Yes	Yes	NA	Scoring agreed. The management advice issued by WCPFC could also be referred to: https://www.wcpfc.int/doc/04/south-pacific-albacore-tuna		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin	Longline	PR A	1.1.2				NA		
Solomon Islands longline albacore and yellowfi	2019	Albacore	Longline	PR A	1.1.2				NA		

n tuna fishery											
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin	Longline	PR A	1.2.1	No (scoring implications unknown)	No (scoring implications unknown)	Yes	f: Please clarify how the justification for the purse seine fishery relates to this longline UoA/UoC. The cited CMM is superseded by CMM 2018-01.	Measures for the purse seine fishery and CMM 2015-01 are not relevant and have been removed	Accepted (no score change)
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Albacore	Longline	PR A	1.2.1	Yes	Yes	Yes	Scoring agreed. a: Suggest clarification of the language regarding the "application" of management actions c.f. "implementation", i.e. do management responsibilities/actions apply to the Philippines and Indonesia and it is uncertain whether they are implemented?	Wording revised as suggested; it is the implementation that has been questioned.	Accepted (no score change)
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Albacore	Longline	PR A	1.2.1	Yes	Yes	Yes	Scoring agreed. c: Clarify or provide a reference for why it is expected that few albacore are discarded. (Noted under f as well, where Tremblay-Boyer is cited).	Tremblay-Boyer et al. reference added to rationale	Accepted (no score change)
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin	Longline	PR A	1.2.2	Yes	Yes	Yes	Scoring agreed. a: The jusitifcation for "generally understood" in relation to HCRs is provided as "where they can be shown to have been applied in some way in the past, but have not been explicitly defined or agreed" (GSA2.5 p.174, MSC Fisheries Standards and Guidance v2.0 2014)	This guidance distinguishes 'generally understood' HCRs from 'well defined' ones but neither are considered to be in place for YFT.	Accepted (no score change)

Solomon Islands longline albacore and yellowfin tuna fishery	2019	Albacore	Longline	PR A	1.2.2	Yes	Yes	Yes	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin	Longline	PR A	1.2.3	Yes	Yes	NA	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Albacore	Longline	PR A	1.2.3	No (scoring implications unknown)	No (scoring implications unknown)	NA	c: The rationale appears to not fit the scoring issue here. The scoring issue requires "good information on all other fishery removals". However, it is clearly stated that there is no information on some of the fishery removals (although efforts are in place to rectify that). Noting that this is a harmonised score that has been subject to considerable scrutiny already, there may be additional rationale that can be incorporated here to justify the scoring. Also, it appears appropriate to mention IATTC information on removals, given the stock goes beyond the WCPFC boundary (as documented in the background section).	Additional text has been added to support the rationale, including a reference to catches in the EPO.	
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin	Longline	PR A	1.2.4	Yes	Yes	NA	Scoring agreed.		

Solomon Islands longline albacore and yellowfin tuna fishery	2019	Albacore	Longline	PR A	1.2.4	Yes	Yes	NA	Scoring agreed. (Note the broken reference link).		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.1.1	Yes	Yes	NA	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.1.2	Yes	Yes	NA	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.1.3	Yes	Yes	NA	Scoring agreed. a, b: It would be helpful to provide a reference for the retention of almost all catch (e.g. Table 9).	Cross reference added	Accepted (no score change)
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.1.3	No (no score change expected)	Yes	NA	Scoring agreed. c: The justification could usefully be focused on information used to support the strategies, e.g., what kinds of data/information support the CMMs?	Additional text has been added to support the rationales.	Accepted (no score change)

Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.2.1	No (scoring implications unknown)	No (scoring implications unknown)	Yes	a: The stock assessments reported for the goldstripe sardinella are of interest but the age of these limits their utility for this scoring issue. The citation for Hoare 2016 is not included in the reference list. I struggle with the conclusion that main secondary species are likely to be within biologically based limits, when what all bait species are, whether they are main, and the populations that they are sourced from, are uncertain or unknown. Is there any other justification that can be added here? Can the other species sometimes used (p. 64) be considered in any more detail? If not, my conclusion would be that the scoring should be revised downward due to the lack of information.	The score is already only at 60 for PI 2.2.1. Some additional text has been added to the rationale in support of allowing a conditional pass.	Accepted (no score change)
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.2.1	Yes	Yes	Yes	Scoring agreed. b: Minor secondary (bait) species are also unknown/uncertain based on the information available.	Yes, but this scoring issue is only evaluated if sia passes at the 80 level.	Accepted (no score change)
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.2.2	No (scoring implications unknown)	No (scoring implications unknown)	Yes	a-c, e: In my view, more clarity is needed on why and how the strategy would be expected to work, especially as it is uncertain/unknown what the bait species are, except for goldenstripe sardinella. The package of controls on the fishing effort appears to be the key mechanism. Would that be expected to apply and work similarly for all other bait species? More rationale is also needed for e, on unwanted catch in bait fisheries.	The relevant measures are essentially those that restrict the level of effort, with the associated monitoring of this effort and the quantity of bait used. Additional text	Accepted (no score change)

										has been added to the rationale to make it explicit that these would be expected to work similarly for all bait species.	
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.2.3	No (scoring implications unknown)	No (scoring implications unknown)	Yes	a: When there may be main (bait) species that have not been identified, the justification provided does not adequately address this scoring issue in my view.	Noted and additional text added to the rationale to make this point	
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.2.3	Yes	Yes	Yes	Scoring agreed. b: Note that there may also be bait species which fall into the minor category.	Noted and additional text added to the rationale to make this point	Accepted (no score change)
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.3.1	No (material score reduction expected to <80)	No (material score reduction expected to <80)	NA	b: I note that observer data and imagery reviewed from the electronic monitoring trial that covered 4 tuna longline trips in the Solomons EEZ detected turtle captures on all trips, involving 4 species of turtles and ~20 turtle captures. The preliminary nature of this data collection is recognised. However, given this reflects a very high incidence of bycatch in a very limited monitoring programme, I consider that SG80 is unlikely to be met for sea turtles unless further rationale can be added as justification for the current score.	Not sure what report is being referred to here. Need to check with client about this trial.	

Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.3.2	Yes	Yes	Yes	Scoring agreed. b: As per Table SA8, the Strategy "should contain mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts". It would be useful to clarify if this is the case (e.g. shark CMMs include clauses for consideration of stock assessment and ongoing review).	Additional text has been added to the rationale to clarify that such mechanisms exist.	Accepted (no score change)
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.3.2	No (no score change expected)	Yes	Yes	Scoring agreed. c: Is it possible to clarify how the ABNJ stock status work on silky sharks shows the measures are working? Or, is it inferred that because the stock is not greatly depleted, that the measures are working? The justification could also include a reference to circle hooks as an effective mitigation measure for reducing sea turtle captures.	Correct, the determination that the stock has not been greatly depleted have been considered to be an objective basis for confidence about the effectiveness of the previously imposed measures. An additional mention of and referece for the use of circle hooks has been added for marine turtles	Accepted (no score change)
Solomon Islands longline albacore and yellowfi	2019	Yellowfin and Albacore	Longline	PR A	2.3.2	No (scoring implications unknown)	Yes	Yes	Scoring agreed. e: SG100 is labelled as not scored, though the justification text for marine turtles states that the requirements of SG100 are met.	Text corrected as suggested	Accepted (no score change)

n tuna fishery											
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.3.3	Yes	Yes	NA	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.4.1	Yes	No (no score change expected)	NA	Note the comment made in General Comments about clarifying when scoring is excluded by MSC process, and when scores are assigned even if issues are not reflected in the fishery (e.g. VMEs for this pelagic longline fishery).	Some additional comment has been added to the rationale	Accepted (no score change)
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.4.1	Yes	No (score increase expected)	NA	c: Based on the rationale and final score of 100, this should be scored Y.	Agreed this error has been corrected	Accepted (no score change)
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.4.2	No (no score change expected)	Yes	NA	Scoring agreed. b: With respect to the impacts of the gear, here the text reports no "significant impacts", whereas elsewhere there are no impacts considered possible at all. It would be helpful to make this consistent. Also, please clarify how monitoring catch supports confidence in relation to fishery impacts on habitats.	The text has been made more consistent as suggested. Additional text about the relevance of catch data has also been added.	Accepted (no score change)

Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.4.3	No (no score change expected)	No (no score change expected)	NA	b, c: This justification relates to purse seine fishing.	References to purse seine fishing have been amended to refer to the UoA.	Accepted (no score change)
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.5.1	Yes	Yes	NA	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.5.2	Yes	Yes	NA	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.5.3	No (no score change expected)	No (no score change expected)	NA	d: This justification applies to purse seine fishing.	References to purse seine fishing have been amended to refer to the UoA.	Accepted (no score change)
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	2.5.3	No (score increase expected)	No (score increase expected)	NA	e: In my view, information is adequate to support the development of strategies to manage ecosystem impacts. It would be helpful if the assessment team provided examples of the additional information that they consider necessary to enable SG100 to be met.	A case could be made that strategies could be developed that deal with any missing information, but we have been	Accepted (no score change)

										conservative in scoring only at the SG80 level. Additional information on bycatch and bait is cited as an example of data that would be important for a strategy to manage ecosystem impacts for this UoA.	
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	3.1.1	No (score increase expected)	No (score increase expected)	NA	a: I suggest that WCPFC CMMs 2009-11 and 2010-06 relating to Cooperating non-members and IUU vessels are considered in the context of the issue identified i.e. "there are no binding procedures governing cooperation with other parties (i.e. those who choose not to be a Party or do not abide by all CMMs)".	While the WCPFC has provisions to deal with non-members where they choose to cooperate and vessels which blatently disregard WCPFC CMMs, the reality is that such proceedures can not bind those who choose not to cooperate or flags which do not have strong and enforceable MCS arrangements governing the	Not accepted (no score change)

										operation of their vessels. It is acknowledged that WCPFC has proceedures to work with States that choose to engage as cooperating non-members and has an IUU vessel listing mechanism (which has not been the subject of many listings over the years), however, the continued global problem of IUU fishing, for which the Pacific Ocean is not exempt, highlight the problems of achieving outcomes consistent with MSC Principles 1 and 2 even with such arrangements.	
Solomon Islands longline albacore	2019	Yellowfin and Albacore	Longline	PR A	3.1.1	Yes	Yes	NA	Scoring agreed. c: The mechanism underpinning the 3 nm limit to fishing off the coast could also be considered here.	Already covered in the Background under Area of	

and yellowfin tuna fishery										Operation (no fishing in archipelagic wates or the territorial sea) and also under Licence Conditions.	
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	3.1.2	Yes	Yes	Yes	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	3.1.3	Yes	Yes	NA	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	3.2.1	Yes	Yes	NA	Scoring agreed.		

Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	3.2.2	Yes	No (score increase expected)	Yes	e: I suggest that the consensus-based approach of WCPFC is a proactive approach to avoiding disputes - including legal disputes if escalation were to otherwise occur. The current justification text highlights that disputes and disagreements are typically resolved at annual meetings. At the domestic (Solomons) level, proceedings are described in the justification as "negotiated". This could be interpreted as an attempt to resolve disputes proactively, and the justification could be updated to clarify whether that is the case.	The claim that consensus based decision making is a proactive approach to avoiding disputes may have some validity, however, such an approach is more likely to produce outcomes which reflect a lower standard (or second or third best outcome) than would otherwise be achieved in a non consensus decision making system. There are many examples of this in RFMO decisions over the years. If avoiding a dispute results in comprises in other management objectives or outcomes this would result in a sub-optimal outcome.	Not accepted (no score change)

										Likewise, negotiated outcomes may avoid legal disputes but may not necessarily result in optimal outcomes. In both the WCPFC and the Solomon Islands there is no evidence to date that the management system or fishery acts to rapidly implement judicial decisions arising from legal challenges.	
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	3.2.3	Yes	Yes	NA	Scoring agreed. c: In my view, the sparsity of observer coverage/electronic monitoring to show compliance at sea to date is also important here, and (in accordance with current scoring) precludes the high degree of confidence required by SG100.	Limited observer coverage is noted in 3.2.3 a. iFIMS and EM are being implemented and will improve both information on compliance and the timely provision of information of importance to the effective	

										management of the fishery.	
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and Albacore	Longline	PR A	3.2.4	Yes	Yes	NA	Scoring agreed.		

Peer Review A—Post PCDR follow-up

Fishery	Year	UoA stock	UoA gear	PR (A/B/C)	PI	PR Comment Code	Peer Reviewer Justification (as given at Public Comment Draft Report (PCDR) stage)	CAB response to Peer Reviewer's comments (as included in the Final Draft Report)	CAB Response Code
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin	Longline	PR A	1.1.1	Yes	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Albacore	Longline	PR A	1.1.1	Yes	Scoring agreed.		

Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin	Longline	PR A	1.1.2				
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Albacore	Longline	PR A	1.1.2				
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin	Longline	PR A	1.2.1	Yes	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Albacore	Longline	PR A	1.2.1	Yes	Scoring agreed.		
Solomon Islands longline albacore and yellowfin	2019	Yellowfin	Longline	PR A	1.2.2	Yes	Scoring agreed.		

tuna fishery									
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Albacore	Longline	PR A	1.2.2				
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin	Longline	PR A	1.2.3				
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Albacore	Longline	PR A	1.2.3	No (no score change expected)	c: The CAB refers to adding additional rationale to address the issue of a lack of information on some fishery removals. The reviewer could not identify that additional information in the justification for this scoring issue. (The text seems to be the same as in the Peer Review Report). If located elsewhere in the report, adding a summary of the key points and cross-reference is recommended.	On review, it was apparent that there were no data gaps and the rationale has been revised accordingly. Previous comments about the lack of data for some countries were not related to albacore as the species is not caught in their waters. Catches in the EPO are reported to the WCPFC but are not used in the stock assessment. Also	Not accepted (no score change)

								the TCC has recorded "TCC13 noted with pleasure that for the first time, all CCMs are providing some operational level catch and effort data"	
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin	Longline	PR A	1.2.4				
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Albacore	Longline	PR A	1.2.4				
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.1.1				
Solomon Islands longline albacore	2019	Yellowfin and albacore	Longline	PR A	2.1.2				

and yellowfin tuna fishery									
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.1.3	Yes	a, b: Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.1.3	No (no score change expected)	c: The reviewer notes the additional reference provided here, but did not see other text changes in the justification that would address the point regarding the kinds of data/information that support the CMMs.	Apologies but the additions to c had been missed. Additional text has now been added to the rationale.	Accepted (no score change)
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.2.1	No (no score change expected)	a: The reviewer notes the new text added, focused on measures that restrict the scale of the fishery as the strategy for managing impacts on bait species, some of which are unknown and used in unknown amounts. This contributes to addressing the scoring issue. (The information presented elsewhere about the estimated total volume of bait used adds to that and would also be useful here). The reviewer has some residual concerns about concluding that unknown bait species used in unknown quantities are likely to be within biologically based limits. Pelagic tuna longline fisheries worldwide use a range of bait species and types (e.g. squid, sardines, pieces of larger fish, etc.). Could identifying the characteristics of bait species sought/purchased/used contribute to	Information on the estimated total volume of bait used has been added to the rationale. The rationale already indicates that the species is thought to be Goldstripe sardine and a description of the large fisheries for this species is provided. We have not concluded that the bait is within biologically based	Accepted (no score change)

							strengthening the rationale for the 60 score (e.g. are all bait species small pelagics)?	limits but that the quantity of bait used in the UoA is sufficiently small as to not hinder rebuilding, should that be required.	
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.2.2	Yes	a-c: Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.2.2	No (no score change expected)	e: In my view, the decision to not score (e) in the context of an unknown bait species caught by unknown fishing methods is difficult to consider precautionary (noting the guidance in GSA3.5.3, currently referred to by the CAB)). Additional justification would be helpful. For example, can any statements be made about the fishing method(s) likely to be used to catch the bait?	We have cited additional evidence to support the rationale and the decision not to score this PI.	Not accepted (no score change)
Solomon Islands longline albacore and yellowfin	2019	Yellowfin and albacore	Longline	PR A	2.2.3	No (no score change expected)	Scoring agreed. a: Additional elements of rationale would help support the justification provided here in my view, in relation to estimation of the impact of the UoA on bait species (e.g. if bait species are unidentified, can any information be	Some additional information about the bait has been added - that it is most likely to be a sardine.	Accepted (no score change)

tuna fishery							added about the characteristics of bait that is used, as noted previously).		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.3.1	No (material score reduction expected to <80)	b: The CAB noted that the study on the electronic monitoring trial conducted in the Solomons EEZ would be discussed with the client. The result of that discussion (and therefore how the reviewer comment was considered otherwise) are unknown. The report for that trial can be found here: https://eminformation.com/1299/2014-solomon-islands-tuna-longline-e-monitoring-project	The information in the report on the EM trial has now been examined and the rates of interactions with turtles compared with the more recent observer data. Both data sets show similar interaction rates: 1 turtle every 12.4 sets or 33,314 hooks on the trial; 1 turtle every 13.4 sets and 41,327 hooks in more recent data. Checks for other species (tuna and silky shark) also show comparable catch rates. So consideration of these earlier data do not suggest a need to revise the assigned scores.	Accepted (no score change)

Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.3.2	Yes	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.3.3				
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.4.1	Yes	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.4.2	Yes	Scoring agreed.		
Solomon Islands longline albacore and yellowfin	2019	Yellowfin and albacore	Longline	PR A	2.4.3	Yes	Scoring agreed.		

tuna fishery									
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.5.1				
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.5.2				
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	2.5.3	Yes	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	3.1.1	Yes	a: Scoring agreed. The CAB's judgement of systems and procedures governing cooperation is accepted by the reviewer.		

Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	3.1.1	Yes	c: Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	3.1.2				
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	3.1.3				
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	3.2.1				
Solomon Islands longline albacore and yellowfin	2019	Yellowfin and albacore	Longline	PR A	3.2.2	Yes	e: Scoring agreed. The reviewer accepts the CAB's judgement regarding the balance between consensus-based decision-making and fishery outcomes. It is noted that among assessments involving		

tuna fishery							WCPFC fisheries, CABs have scored this issue differently.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	3.2.3	Yes	Scoring agreed.		
Solomon Islands longline albacore and yellowfin tuna fishery	2019	Yellowfin and albacore	Longline	PR A	3.2.4				

Table 36 Peer Review Response B—General

Question	Yes/No	Peer Reviewer Justification (as given at initial Peer Review stage). Peer Reviewers should provide brief explanations for their 'Yes' or 'No' answers in this table, summarising the detailed comments made in the PI and RBF tables.	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)
Is the scoring of the fishery consistent with the MSC standard, and clearly based on the evidence presented in the assessment report?	No	Most of the scoring has been harmonised therefore the reviewer has to agree with the score. However, for P1 the justifications for the scores are not adequate, especially regarding the stock assessment methods and results.	Additional text has been added to some rationales.

Are the condition(s) raised appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCP v2.1, 7.18.1 and sub-clauses]	Yes		
Is the client action plan clear and sufficient to close the conditions raised? [Reference FCR v2.0, 7.11.2-7.11.3 and sub-clauses]	No	The client action plan is clear, but there is always the concern that the RFMO is not going to achieve these outcomes. Also, I am not sure if there is a score like 75 if only one sub-SI is scored. I believe it is either 60 or 80.	[Which PI is being referred to here?]
Enhanced fisheries only: Does the report clearly evaluate any additional impacts that might arise from enhancement activities?			
Optional: General Comments on the Peer Review Draft Report (including comments on the adequacy of the background information if necessary)	N/A	The report is very well written. The background is detailed and reads easily and well. However, the scoring tables, especially P1, lack in some cases more substantiated arguments. Also, referring to the background for graphics is really tedious, therefore the scoring would be followed better with some graphics. P3 scoring tables are very long and maybe a bit repetitive, but the information is at least all there.	The background contains intentionally contains more detail than the rationales and is cross-referenced to avoid duplication of graphics.

Table 37 Peer Review Response B—PI Specific

UoA stock	PI	PI Information	PI Scoring	PI Condition	Peer Reviewer Justification (as given at initial Peer Review stage)	CAB Response to Peer Reviewer's comments (as included in the Public Comment Draft Report - PCDR)	CAB Response Code

Yellowfin tuna	1.1.1	No (no score change expected)	No (no score change expected)		Confidence intervals should be provided for the estimates in order to follow the MSC scoring. I understand that these were not estimated in the 2017 assessment. The grid assessment estimates are the median values, therefore it is possible that many of the other models lower 5% confidence interval could be below the PRI. Yes, the projections done by Pilling in 2014 indicate that the probability is very low of falling below LRP, but these were also started at the median point estimate or am I mistaken here? Not sure how SI(a) can score a 100, but this stock has been harmonized. It would be a lot clearer if some graphic details on these projections were provided as well. Maybe also refer to the Kobe plots in the background section. A graphic illustration of the B/BMSY trajectory would be supportive to the score. As it stands it is not clear whether the stock is fluctuating around the MSY level. Even though this assessment has been harmonized,considering the weight that this PI carries in the overall score a lot more detail should be provided to support the current score.	As noted by the reviewer, this is a harmonised score and most of the rationale is also common to other assessments. Nevertheless, additional text has been added to the rationale, and in particular some detail from the SC report itself has been added (Table YFT-2 and Figure YFT-5). These now show information for the 48 models that the SC selected for management advice, including the lower 10 percentiles. The assessment considers both statistical uncertainty in the 'diagnostic case' and structural and data uncertainty across an uncertainty grid. As recommended by the assessment scientists, the SC has adopted the latter approach in framing its management advice and the rationale accepts this approach for determining the scores. The latest assessment indicates that the stock has never declined to below MSY levels so the rationale is about the stock being at least at this level, not fluctuating around it.	Accepted (no score change)
Yellowfin tuna	1.1.2						

Yellowfin tuna	1.2.1	No (no score change expected)	No (no score change expected)	Yes	Even though no HRC's exist, the harvest strategy design, as simple as it may be, is designed and tested to keep the YFT stock above the PRI. This SI is harmonized, therefore the score can't be changed, but the monitoring and stock assessment as well as projections are of high quality, which should be good enough to score SI(a) at SG80. This argument is supported by the fact that SI(b) does reach SG80, the criteria of which is very similar to SI(a). Maybe, the assessors can add here some of the measures that are in place for the management of this stock.The fact that HCRs are not in place should be penalized under PI1.2.2.	As noted by the reviewer, this is a harmonised score. The views of the reviewer are also shared by some assessors but full agreement is needed to increase scores. The core argument is that a harvest strategy cannot meet SG 80 without all the elements required by MSC's definition in place; non-existent elements cannot be said to be 'working together'. PI 1.2.2 assesses the quality of the HCR, but to meet SG 80 at PI 1.2.1 still requires all HS elements to be present. Having good stock assessments and monitoring are necessary but not sufficient.	Accepted (no score change)
Yellowfin tuna	1.2.2	Yes	Yes	Yes	The management measures are described in detail under this PI. Would these not be better placed under PI1.2.1 SI(a) to support potentially a higher score (SG80)	No score change to PI 1.2.1 is warranted.	Not accepted (no score change)
Yellowfin tuna	1.2.3	Yes	Yes		Score and rational agreed		Accepted (no score change)
Yellowfin tuna	1.2.4	No (no score change expected)	Yes		The stock assessment method should be described in more detail, also in the background section. For example some of the major features relevant to biology should be listed, as well as some of the sensitivity tests. At this stage the rational used is very generic. Confidence levels have not been provided by the latest assessment. That should be mentioned and penalised somewhere. SI(a) to SI(d) needs to have a lot more detailed information to support the scores.	This is a harmonised score so no penalty to scoring can be applied. Nevertheless, additional information has been added to the background and rationale as suggested including how uncertainty has been treated (through a combination of statistical uncertainty and structural uncertainty).	Accepted (no score change)

Southern Albacore	1.1.1	No (no score change expected)	No (no score change expected)		P1 is harmonized so no change of scores are expected, however, no confidence limits are provided, therefore how was the SI(a) score justified? Some graphics within the scoring tables would make the justifications easier to understand. In SI(b) not even the B/BMSY was mentioned, let alone the CIs. The Kobe plots would need more explanation in regards to percentages etc. It is not that the score of 100 is not agreed, but it has not been justified at all in the arguments. This needs a lot of work.	As noted by the reviewer, this is a harmonised score. The most recent stock assessment estimate the stock continues to be at such a healthy level that there is no question about it being above the PRI or MSY levels. Some of the evidence that was provided in the background and cited has been added to the rationale.	Accepted (no score change)
Southern Albacore	1.1.2						
Southern Albacore	1.2.1	Yes	No (no score change expected)	Yes	As for the YFT, the rational actually supports SG80, as the stock is apparently way above the PRI, therefore the harvest strategy must be responsive to the state of the stock as it is achieving the management objectives reflected in PI1.1.1 SG80. Again, this has been harmonized, but the fact that there is no HCR should be penalised under 1.2.2, as many management measures are in place for this fishery. Considering that SI(b) reaches the SG80 score is makes no sense that the SI(a) does not.	As noted by the reviewer, this is a harmonised score. The views of the reviewer are also shared by some assessors but full agreement is needed to increase scores. The core argument is that a harvest strategy cannot meet SG 80 without all the elements required by MSC's definition in place; non-existent elements cannot be said to be 'working together'. PI 1.2.2 assesses the quality of the HCR, but to meet SG 80 at PI 1.2.1 still requires all HS elements to be present. Having good stock assessments and monitoring are necessary but not sufficient.	Accepted (no score change)
Southern Albacore	1.2.2	Yes	Yes	Yes	Agreed score and rational		

Southern Albacore	1.2.3	Yes	Yes		Some of the wording is too generic. For example "Because there is some conflict between some of the data sources…" it would be very useful if some of the issues are actually shown graphically or discussed in more detail. There are always some uncertainties and conflicts between data, therefore a whole range of sensitivities are undertaken with the stock assessment. This should not be a reason for SI(b) not to score SG100.	This is a harmonised score and much of the rationale is also shared with other SPA assessments. Additional text has been added to the rationale to support the agreed score.	Accepted (no score change)
Southern Albacore	1.2.4	No (no score change expected)	Yes		The stock assessment method should be described in more detail, also in the background section. For example some of the major features relevant to biology should be listed, as well as some of the sensitivity tests. At this stage the rational used is very generic. Confidence levels have not been provided by the latest assessment. That should be mentioned and penalised somewhere. SI(a) to SI(d) needs to have a lot more detailed information to support the scores.	This is a harmonised score so no penalty to scoring can be applied. Nevertheless, additional information has been added to the background and rationale as suggested including how uncertainty has been treated (through a combination of statistical uncertainty and structural uncertainty).	
Solomon longline	2.1.1	No (material score reduction expected to <80)	No (material score reduction expected to <80)		For SI(a) to reach SG80 there may only be a 20% chance that the stock is below PRI and a 10% probability that the stock is below the MSY. Under the rational no confidence levels or reference points were mentioned, neither any median values. This also applies to SI(b). This PI needs to be redone to comply with the MSC guidance.	The rationale has been revised to include additional evidence that was previously just cross-referenced in the background.	Not accepted (no score change)

Solomon longline	2.1.2	No (material score reduction expected to <80)	No (material score reduction expected to <80)		For this PI it is rationalised that a harvest strategy is in place and there is a high confidence that the strategy will work. For BET and SKJ the score is SG100, which contradicts the scores given for the target species; YFT and ALB, both only reaching SG60. All species are managed by the same RFMO, therefore harvest strategies should be very similar.	There are different requirements for P1 and P2 species. 1. For P2 species the requirement is only that stocks are maintained above the PRI (the point of serious or irreversible harm) not at a target level. 2. Under P2 it is the impact of the UoA that is relevant not the status of the stock as a whole. 3. The term strategy as used here is not the same as a harvest strategy for P1 species which has a more restrictive definition. We do not consider it inconsistent to score BET and SKJ at 100 under P2 when they would not attract such a score under P1.	Not accepted (no score change)
Solomon longline	2.1.3	No (non-material score reduction expected)	No (non-material score reduction expected)		The same arguments count here. According to the score the information is available to assess the impact of the UoA with a "high degree of certainty". This needs a better justification.	As above, it is the impact of the UoA that is being assessed not the status of the stock. There is strong evidence available about the impact of the UoA from the comprehensive data collection systems	Not accepted (no score change)
Solomon longline	2.2.1	Yes	Yes	Yes	Agreed score and rational		
Solomon longline	2.2.2	Yes	Yes	Yes	Agreed score and rational		
Solomon longline	2.2.3	Yes	Yes	Yes	Agreed score and rational		
Solomon longline	2.3.1	Yes	Yes		For more convinced interpretation it is a given that percentages or other quantitative measures should be mentioned in the rational. For example: "is a very low percentage" Please give the percentages in the scoring tables. Also the state of the ETP species (if known) should be indicated in the rational with CI.	The percentages of the catch (all <1%) have been mentioned in the rationale. Additional information on status of ETP species has been added where known.	Accepted (no score change)

Solomon longline	2.3.2	No (material score reduction expected to <80)	No (material score reduction expected to <80)	Yes	Again it is said there is a "strategy in place" for ETP species, but that was not indicated to be so for the target species, therefore it appears contradictory. The score should not be more than SG60, especially considering the low level of observer coverage.	As for PI 2.1.2 there are different requirements of P2 species and the term strategy has a different meaning. A condition is already proposed for si d where the evidence of successful implementation is considered deficient.	Not accepted (no score change)
Solomon longline	2.3.3	No (material score reduction expected to <80)	No (material score reduction expected to <80)		Considering the low observer coverage it would be irresponsible to score these scoring issues more than SG60. Clearly, some changes must be made before the words "adequate" can be justified.	Need to discuss with SCS - possible new condition	
Solomon longline	2.4.1	Yes	No (score increase expected)		SI© SG100 should be Y instead of N.	Text corrected as indicated	Accepted (no score change)
Solomon longline	2.4.2	Yes	Yes		Score and rational agreed		
Solomon longline	2.4.3	Yes	Yes		Score and rational agreed		
Solomon longline	2.5.1	Yes	Yes		Score and rational agreed		
Solomon longline	2.5.2	Yes	Yes		Score and rational agreed		
Solomon longline	2.5.3	Yes	Yes		Score and rational agreed		
Solomon longline	3.1.1	Yes	Yes		The scoring justifications are clearly set out and comprehensive; fully supporting the scores.	No response	

Solomon longline	3.1.2	Yes	No (score increase expected)	Yes	I believe PI3.1.2 is on the regional level, therefore for SI(b) and (c) the fact that the FAC has not met since 2015 should not penalise the score, therefore the score should meet at least SG80.	Per SA4.4.4, Consultation processes that exist at a multinational level and a national level shall be included and considered, subject to SA4.1.3. While for this PI both regional and Solomon Islands management systems are considered, considerably more weight is placed on the Solomon Islands arrangements as these are important and feed into both domestic and regional management systems. The SI specifically refers to regularly seeking and accepting relevant information, including local knowledge. The Solomon Islands has well established arrangements specified in the Fisheries Management Act 2015 and the Tuna Management and Development Plan. However, evidence was not forthcoming on the extent of consultation in the development of the Plan (as required by the Act); and the Fisheries Advisory Council (FAC) - the key consultative body established by the Act (with broad membership) has not met since 2015. The SI requires that the management system demonstrates consideration of the information obtained. In this regard the Plan states that "Information on fishery performance and management action is available on request, and explanations are provided to the Tuna Industry Association of the Solomon Islands (TIASI) for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring evaluation and review activity." however there was very limited evidence this has occurred.	Not accepted (no score change)

Solomon longline	3.1.3	No (material score reduction expected to <80)	No (material score reduction expected to <80)		The precautionary approach which is consistent with the MSC standard would be to have had HCRs in place which have undergone MSEs. This is not in place as yet for any species, therefore I am not sure whether for SI(a) it can be said the approach is explicit within the management policy.	This PI requires that "The management policy has clear long-term objectives to guide decision-making that are consistent with MSC fisheries standard and incorporates the precautionary approach". SA4.5.1 states " 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". The Fisheries Management Act 2015 (the highest level of fisheries policy/guidance) has clear long term objectives and the requirement that the precautionary approach 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."	Not accepted (no score change)
Solomon longline	3.2.1	No (material score reduction expected to <80)	No (material score reduction expected to <80)		The same arguments as in PI3.1.3 count here. Principles 1 and 2 are not explicit within the fishery-specific management system, therefore SI(a) should be scored SG60.	If the rationale here is the same as in PI 3.1.1 it is rejected for the same reason as provided in PI 3.1.1. The scoring at SG80 requires that short and long-term objectives "consistent with achieving the outcomes expressed by MSC's Principles 1 and 2" are explicit in the management system. The management system is considered on two levels - the WCPFC and the Solomon Islands. There are a range of CMMs which have been developed and implemented by the WCPFC which are explicit and designed to achieve outcomes consistent with MSC Principles 1 and 2. At the Solomon Islands level, as a member of WCPFC it is required to fully implement all WCPFC CMMs. In addition, the first two goals of the Tuna Management and Development Plan are "To ensure that fish stocks are maintained at sustainable levels to support profitable fisheries" and "To manage fisheries within recognised principles of the ecosystem approach to fisheries". These goals, when combined with the Expected Results and the Objectives and Strategies to support Goals and Strategies, provide well defined measurable short and long-term objectives to manage the fishery domestically.	Not accepted (no score change)

Solomon longline	3.2.2	Yes	Yes	Yes	Agreed score, but it shows that for SI(b) the fact that the FAC has not met since 2014 is being penalised here and should not be done so twice.	3.2.2 SI (b) has been scored not only on the basis of the FAC not meeting, but that evidence that meetings between MFMR and TIASI (the main consultation processes for industry in the Solomon Islands) ''deal specifically with relevant research, monitoring, evaluation and consultation in a transparent, timely and adaptive manner'' could not be provided.	
Solomon longline	3.2.3	No (score increase expected)	No (score increase expected)		SI(b) does not reach SG100, because evidence could not be provided that sanctions are a deterrance. The fact that very few offenses have been observed and that there is a good level of compliance indicates in itself that sanctions are a deterrance or not? I believe this SI could score SG100. The same goes for SI(c).	The number of offences identified and pursued is not always a good indication of the level of compliance in a fishery. The legislative and administrative arrangements in place provide a sound compliance framework and demonstrates that sanctions to deal with non-compliance exist. The actual level on non-compliance is more difficult to assess and the conclusions in relation to SI are based on anecdotal information, thus the arrangements are thought to provide effective deterrence. In addition, there is a very low level of observer coverage and limited EM, and hence limited information on which to base a higher score for either SI (b) or (c).	Not accepted (no score change)
Solomon longline	3.2.4	Yes	Yes			No response	

Appendix 3 Stakeholder Submissions

Table 38. Summary of Stakeholder Submissions

Organization	Representative	Date Received	Medium of submission (verbal/written)	Summary of verbal sub. /Section in report written sub.
PNAO	Richard Banks & Les Clark	6 April 2019 for another assessment. Advised on 10 June of wish that same submission be considered in this assessment.	Attachment to email submission	Copy of written submission and response is included below.
ISSF	Ana Justel	October 3, 2019	MSC Stakeholder Form (email)	Written submission and response is included below.

Table 39. Summary of Stakeholder Comments and Reponses by Performance Indicator

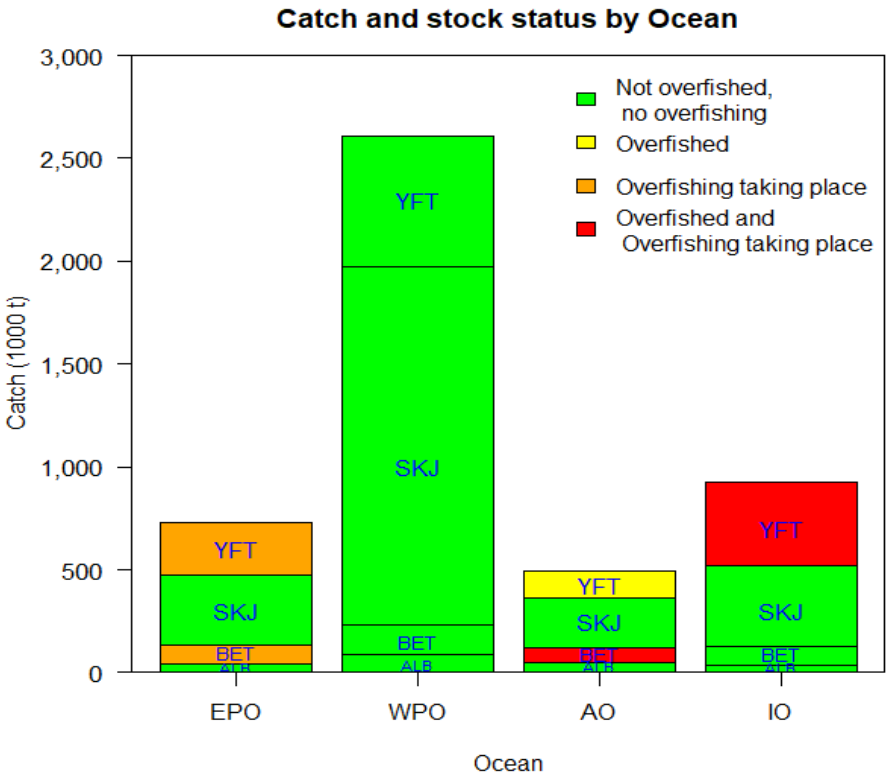
Comment Number	Performance Indicator	Summary	Team Response*
1—PNAO	1.2.1a	Scoring issue is met at SG100 level for SKJ at least	No agreement that HS meets SG80 level yet. With no HCR in place (just 'available') all the required elements of a HS are not present and therefore could not yet be considered to be working together.
2—PNAO	1.2.2a	HCRs are still not well defined (so SG80 is still not met) but they are 'generally understood' and 'in place' rather than just 'available' for SKJ.	No agreement that HCRs are generally understood for any tuna species. Conditional pass still only met using the availability criteria.
3—PNAO	1.2.2c	Because generally understood HCRs are 'in place' the tools in use can be evaluated and there is evidence that these are appropriate and effective meeting SG80.	No agreement that even generally understood HCRs are in place. Therefore SG80 requirements still cannot be met.
4—ISSF	1.2.2.a, c	Scoring issues would not meet SG60 and would fail	These are harmonized scores that have been agreed upon with MSC P1 experts. Concern of slippage is acknowledged and the variation request is an attempt to address this concern.
5—ISSF	2.4.2	Concern over impact of lost gear on the habitat from pelagic fishing activity	Rationale was revised to clarify the strategy that addresses the requirement
6—ISSF	3.1.3 & 3.2.1	SG100 is not met for WCPFC. A partial score should not be awarded.	The team agreed that WCPFC does not meet SG100 (only SG80). Solomon Islands management system does meet SG100. A partial score is justified given that it is met for one system but not the other.

The PNAO submission and SCS's response are included below

PNAO SUBMISSION ON SKJ AND YFT HS and HCR
FOR THE 1st SURVEILLANCE AUDIT ON THE RENEWED CERTIFICATION ON THE PNA WESTERN AND CENTRAL PACIFIC SKIPJACK AND YELLOWFIN, UNASSOCIATED / NON-FAD SET, TUNA PURSE SEINE FISHERY

Overview

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



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

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

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

a) Are currently being achieved;

b) Have always been achieved; and

c) Are likely to continue to be achieved

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

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

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

1.2.1 Harvest strategy

1.2.1a Harvest strategy design

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

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

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

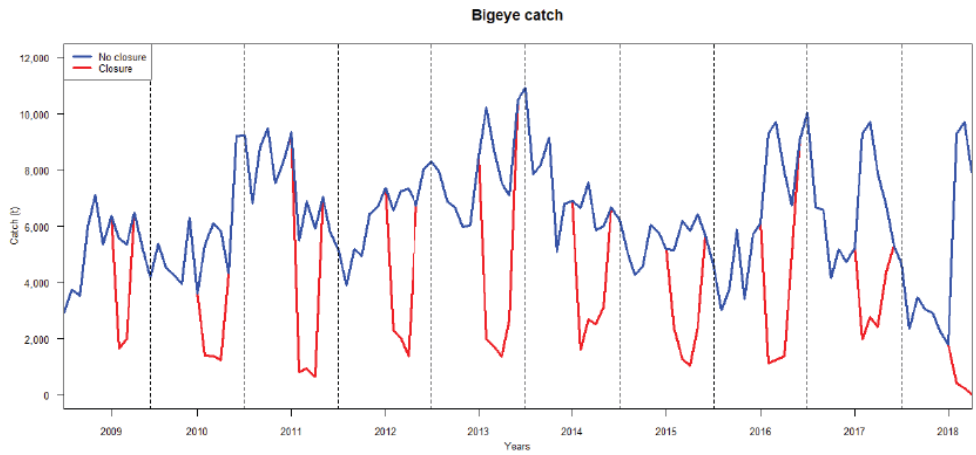
It is now clear that the bigeye tuna stock is not overfished, and never was overfished. It must therefore follow that the fact that the bigeye stock, and the yellowfin stock, and the skipjack stock are not overfished and have never been overfished at least removes the previous reduction in confidence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

More generally, there is now evidence of:

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

- the FAD closure

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



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

and

- the measures adopted being likely to rebuild the stock:

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

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

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

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

and

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

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

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

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

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

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

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

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

- Systematic revision of the CMM based on the conclusions of the SPC Evaluation of Management Options with the aims of:
  - i) achieving the objectives set in the measure, including keeping the SKJ TRP around the TRP; and
  - ii) ensuring a very low risk of breaching the LRPs for all 3 stocks

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

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

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

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

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

The set of effort limits adopted in the CMM reflects

i) the scientific advice that the spawning biomass was around the TRP and action should be taken to keep the spawning biomass near the TRP; and

ii) the projection results which indicated that maintaining effort at recent levels would keep the SKJ spawning biomass around the TRP

1.2.2 Harvest Control Rules and Tools

1.2.2a HCRs Design and Application

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

Relevant MSC advice[18] includes (emphases added):

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

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

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

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

The fishery meets these tests in that:

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

b) The Tropical Tuna CMMs have been and continue to be, "in place."

c) Evidence and examples of the positive actions taken in response to the "generally understood" HCRs for skipjack are provided in a) above; and

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

d) The figure below illustrates the effectiveness of the PNA VDS working together with the WCPFC Tropical Tuna CMM to cap and bring down purse seine effort and skipjack fishing mortality since 2010 to achieve an exploitation level well below FMSY consistent with maintaining the spawning biomass around the TRP .

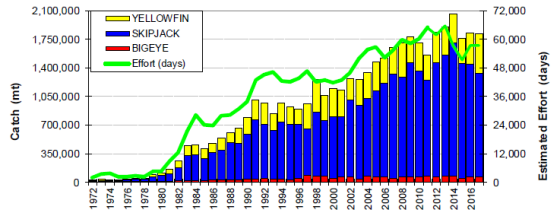


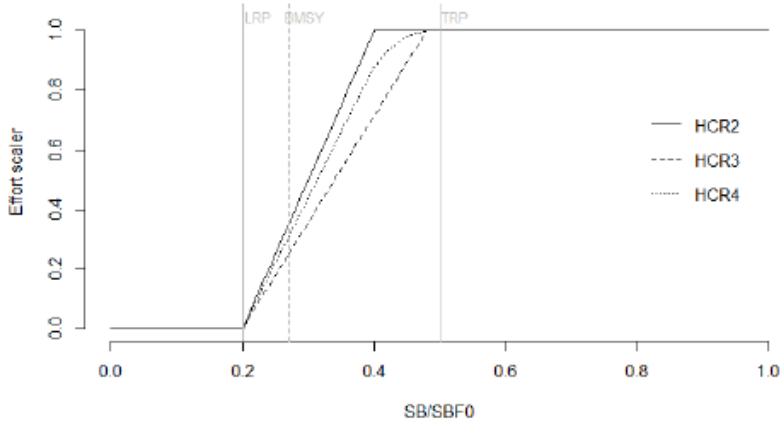
Figure 3.1.2 Purse seine catch (mt) of bigeye, skipjack and yellowfin and estimated fishing effort (days fishing and searching) in the WCP–CA

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

In addition, further evidence of the "generally understood" HCR for skipjack being in place includes:

a) the process of preparation of the current Tropical Tuna CMM including the adoption of clear objectives for all 3 tropical tuna stocks; the evaluation of management options in the manner summarised above and the outcome in terms of the revision of the CMM in response to the status of the stock and the advice on the effectiveness of different management options to achieve the agreed management objectives.

b) The ongoing work on the design of a formal HCR for skipjack centred on the form of candidate HCRs illustrated below.



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

including work reported in:

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

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

1.2.2c HCRs Evaluation

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

The re-assessment considered that *"Given SIa finds HCRs are 'available', the tools are not considered to be in use and SG80 is not met."* consistent with the MSC advice that "*Due to the scoring rules, if HCRs are only regarded as 'available' in scoring issue (a), it is not possible to score more than 60 for issue (c) since the SG80 refers to the tools 'in use' in the fishery in assessment, not the tools 'in use or available'*

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

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

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

1.2.3 – Information and Monitoring

1.2.3b Monitoring

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

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

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

These 2 points can be checked with SPC.

SCS Response to 2019 PNAO Submission

This response is to the latest written submission provided to SCS on 6 April 2019 by PNAO as a stakeholder response for the PNG-FIA assessment which the PNAO also later requested to be considered for other assessments or surveillance audits which were being undertaken in early 2019. It has been drafted by SCS but reflects the outcomes of the most recent harmonization discussions.
Harmonisation is one of the MSC's main priorities in ensuring the credibility of the standard. In 2016 CAB representative and team members participated in a Harmonisation Workshop which resulted in agreed scores for Principle 1 for the yellowfin tuna and skipjack tuna stocks in the western Pacific managed by the Western and Central Pacific Fisheries Commission (WCPFC). The input provided by the PNAO submission triggered harmonisation discussions amongst CABs to review the previously agreed-upon scores for these stocks. The harmonisation discussions did not result in a change to scores, however, they led CABs to seek further guidance on interpretation of the standard from MSC (See below).

In brief this submission argues that that the management objectives for all three main tuna stocks (skipjack, yellowfin and bigeye tuna) as set out in the stream of Tropical Tuna CMMs over time are currently being achieved, have always been achieved, and are likely to continue to be achieved.
Response: The good status of the key tuna stocks in the WCPO is noteworthy and is reflected in scores for PI 1.1.1 (unconditional passes for all key tuna species). The scoring of the harvest strategy, however, evaluates prescribed aspects of the system that delivered that outcome, and there is no guaranteed pass for those just because stock status is still good.

The subsequent detailed arguments for specific performance indicators in the PNAO submission were mainly focused on skipjack tuna but the PNAO considered that the same comments broadly applied to the yellowfin tuna UoA as well.

PI 1.2.1a. The PNAO submission argues that the score for this PI should be 100.

Response: The MSC identifies a Harvest Control Rule in place (even if just a generally understood one) as one of the key elements required in a harvest strategy (MSC Standard v2.01 GSA2.4) and so the lack of any form of HCR is relevant to the logic behind whether the harvest strategy elements (as defined by MSC) work together as required by the SG80 level for Scoring Issue a for PI 1.2.1. Applying the MSC definition of a harvest strategy, it is understood that a harvest strategy for a fishery could not be given an unconditional pass for PI 1.2.1 without a HCR being in place.

Nevertheless, SCS with other CABs recognize the potential validity of this argument, and have in response submitted an interpretation request to MSC on July 2019, to clarify this issue. No formal response has been received to the request to the date of the publication of this report.
In conclusion, there is still considered to be insufficient evidence that scoring issue 1.2.1a reaches the SG80 level.

PI 1.2.2a. The PNAO submission argues that a generally understood HCR is in place and not just available. This does not affect the score for this PI but could affect how PI 1.2.1a is scored and would also allow a different approach for PI 1.2.2c.

Response: There has previously been agreement among CABs that there is not even a generally understood HCR for skipjack tuna (or other tuna species). A 60 score has been achieved for 1.2.2a on the basis of 'available' HCRs not one that is 'in place'.

The PNAO submission provides a more detailed and coherent argument than has previously been submitted to CABs, however, it does not provide any new information that would be considered material to scoring. All measures introduced by WCPFC have been negotiated outcomes that, although important and positive for stock conservation, had not been considered to follow even a generally understood HCR.

The MSC Interpretation on HCRs instructs CABs that, when there is uncertainty over whether a HCR meets the requirements of 'generally understood', they should follow the precautionary approach and award a lower score. So, in the absence of new and stronger evidence that the previous decision was incorrect, the status quo should apply and a condition be maintained.

PI 1.2.2c. The PNAO submission argues that the available evidence indicates that the tools in use (not just available) are effective and that a score of 80 is warranted.

Response: As the HCRs are still not considered to be in place, then following MSC advice, it is not possible to score more than 60 for issue (c) since the SG80 refers to the tools 'in use' in the fishery in assessment, not the tools 'in use or available'.

ISSF Stakeholder Submission and SCS response

General Comments

General comments	Evidence or references	CAB response to stakeholder input	CAB Response Code
Conditions on HS and HCR (Conditions 1-4) ISSF supports the 4 conditions established in the PCDR towards implementation by WCPFC of robust Harvest Strategies and Harvest Control Rules for WCPO yellowfin and South Pacific albacore tuna. As regards the Client Action Plan to meet these conditions, ISSF acknowledges all advocacy activities described and would like to suggest that TriMarine considers joining the newly reconstituted **WCPO MSC alignment network** which advocates for harvest strategies and other priorities.	https://www.wcpfc.int/node/33008 http://www.iattc.org/Meetings/Meetings2019/IATTC-94/OtherDocs/_English/IATTC-94-OTR_Non-Governmental%20Organizations%20(NGO)%20Tuna%20Forum%20lettert.pdf	This is a matter for the client and the suggestion will be forwarded to them.	Not accepted (no score change)

Performance Indicator (PI)	Input summary	Input detail	Evidence or references	Suggested score change	CAB response to stakeholder input	CAB response code
1.2.2 - Harvest control rules and tools **(YFT)**	The independent report by Medley et al. (2019) indicates that the fishery would not meet SG60 for SI 1.2.2.a and 1.2.2.c and that, as a result, the overall PI score would be less than 60 ("Fail").	The independent report by Medley et al. (2019) indicates that the fishery would not meet SG60 for SI 1.2.2.a and 1.2.2.c and that, as a result, the overall PI score would be less than 60 ("Fail"): **1.2.2.a**: "At SG60, MSC allows a harvest control rule to be 'available' rather than 'in place' if the requirements summarised below are met (for full list see SA2.5.2, 2.5.3): • Stock biomass has not previously been reduced below the MSY level, or has been maintained at that level for a recent period of time … and is not predicted to be reduced below BMSY within the next 5 years;	Medley et al. (2019)	<60	This is a harmonized score and rationale which is based on full consideration of MSC requirements by a range of P1 experts. It has been agreed that the stock meets the requirements for 2.5.2a and 2.5.3b and that a pass at SG60 is appropriate. It is not necessary to meet 2.5.2b and 2.5.3a as well. We share the concerns about slippage with the harvest strategy workplan and this has in part prompted the new VR for all tuna fisheries. The timeframe is now set.	Not accepted (no score change)

		• HCRs are effectively used in other stocks by the same management body or an agreement or framework is in place requiring the management body to adopt HCRs before the stock declines below BMSY. MSC's second requirement for an 'available' HCR is met for yellowfin by CMM 2014-06. In terms of the first, for WCPO yellowfin, stock biomass has not previously been reduced below the MSY level, according to the stock assessment. There are no short-term projections available at present based on the new assessment to evaluate likely stock trajectory over the next five years but as noted in 1.1.1 and 1.2.1, the probability of either SB or F being below the MSY level is quite small, and on that basis, it is not likely that the biomass will decline below the MSY level in the next five years. However, the biomass trajectory is consistently downwards throughout the time series, and there is no particular reason at present to suppose that it will stabilise above BMSY under the current management regime. However, the case of bigeye raises the question as to what actions WCPFC could be relied on to take, should the next stock assessment for yellowfin give a different perception of the stock status (as happened for bigeye in 2017). Despite bigeye being considered overfished from 2011-2017, the management actions put in place by WCPFC have shown no evidence so far of being able to reduce fishing mortality on bigeye, as shown by the most recent stock assessment. On this basis, there is no particular evidence that any 'available' HCR is able to reduce the exploitation rate as the PRI is approached. On this basis, SG60 is not met. For improvement in this scoring, some demonstrable progress is required towards a formal harvest strategy and HCR (as per CMM 2014-06) such that a more convincing argument can be made that effective action will be taken if required. There was no progress at WCPFC14 and it does not appear as if there was any at WCPFC15 either. The authors are aware that this scoring may not be consistent with the MSC certification of several fisheries targeting this stock. One reason for this difference is that this assessment is a pre-assessment, not a full assessment. A full assessment is based on a strict interpretation of the MSC requirements (scoring issues and guidance) at the time of scoring. A pre-assessment is more focused on risks to an MSC assessment failing and may be more useful to stakeholders to inform decisions about entering certification over a timeframe of a year or more, with the certification process taking a further year or so. A pre-assessment therefore needs to take into account what the situation with the stock is likely to be over this timeframe. We are concerned that although strictly the MSC requirements may be met at time of writing, there has been slow progress with the development of harvest strategies for WCPFC stocks since the commitment was made (CMM 2014-06 was agreed) and strict timelines are not being observed. The workplan for the implementation of CMM 2014-06 has been systematically revised, with CPCs seemingly unwilling to apply the timetable (e.g. see WCPFC14 report).				

		Based on this situation, MSC-certified fisheries with condition milestones for the achievement of a formal harvest strategy for this stock should, based on MSC procedures, be first scored at audit as 'behind target' and subsequently (the following year) have their certificates suspended if progress has not been made. The authors are unclear as to why fisheries on these stocks have been able to retain their certificates in the absence of any substantive progress up till now. Based on our understanding of the MSC standard, unless granted a special case (a variation request), these fisheries would not meet MSC certification requirements at this point." (…) 1**.2.2.c**: "Under SA2.5.5, in order to conclude that 'available' HCRs are 'effective' (SG60), MSC requires evidence of i) the use of effective HCRs in other stocks or fisheries under the same management body; or ii) a formal agreement or framework with trigger levels which will require the development of a well-defined HCR. It also requires consideration of current exploitation rates in relation to biological reference points and the agreed trigger level (guidance for SA2.5.6: 'evidence that current F is equal to or less than FMSY should usually be taken as evidence that the HCR is effective'). The authors are aware that this is not the same as the scoring applied in various MSC certifications for fisheries targeting this stock. The reasons for this are set out in the rationale for 1.2.2a above, and are primarily due to the different purpose of a pre-assessment and timing for meeting the MSC requirements. In our opinion, in order to meet MSC requirements at this stage, some demonstrable progress is required towards an effective formal harvest strategy (as per CMM 2014-06) such that it is more clear that management tools are likely to be able to maintain stocks at agreed target levels. The tools by which CMM 2017-01 is implemented for yellowfin are as follows: • temporal / spatial limits on purse seine setting on FADs • restrictions on purse seine effort (days) There are no limits on longline fishing for yellowfin, although catch limits for bigeye may (may) limit effort for some CCMs. The catch time series in the 2017 stock assessment runs to 2015; the harvest strategy has only been in place since 2014, and is incremental, so it is hard to say what impact it has had up till now. Estimated juvenile F has stabilised and perhaps decreased, but the trajectory of adult F does not seem to have been altered. The trajectory of stock biomass is downwards throughout the time series. On this basis, there is no particular evidence that the various tools in place are effective in controlling fishing mortality, and no reason to suppose that the stock trajectory will not continue downwards. **On this basis, SG60 is not met**."				

2.4.2 - Habitats management strategy	PI would not meet SG100 due to the lack of a management strategy.	While the fishery is a pelagic fishery and there are no interactions with benthic habitats, the possibility of ghost fishing by lost or discarded gear should be taken into account. The Habitat section of the PCDR does not describe any management strategy in place to manage the impacts of the fishery on habitat types directly or due to ghost fishing. SG100 would not be met for SI a.		90	The rationale has been revised to clarify the strategy that addresses the requirements of the scoring issue	Not accepted (no score change)

3.1.3 - Long term objectives	According to the independent report, this PI would only meet SG80 at the regional level and, therefore, a partial score would not be justified.	According to the independent report, this PI would not meet SG100 at the regional level. **WCPFC** – "(…) While it appears to be a requirement, in practice it is less clear that the precautionary approach is applied in practice across all policy. Stock assessments in 2010, 2011 and 2014 indicate that bigeye fishing mortality exceeded levels consistent with MSY. While precautionary reference points have been set, there has not been a corresponding precautionary action that has reduced exploitation levels. Overall, clear explicit objectives incorporating the precautionary approach and ecosystem-based management in the policy meet the MSC Principles and Criteria, and defined, meeting SG80. However, it is not yet clear that the precautionary approach is applied in practice across all policy for all stocks, so **SG100 is not met**".	Medley et al. (2019)	80	The team is in agreement with the stakeholder comment regarding the score for the WCPFC, but a partial score has been awarded because the management policy of the Solomon Islands reached SG100. The rationale specifies that SG100 is not met for the WCPFC because the precautionary approach have not always been followed within management and policy by the Commission and it has historically struggled to do so for some stocks (which is also pointed out by the stakeholder). For Solomon Islands, SG100 is met because the Fisheries Management Act of 2015 'provides clear long-term objectives, which when combined with fishery specific management plans and the principles in Section 5(1), provide for decision making consistent with MSC Fisheries Standard and the precautionary approach which is explicit and required in management policy.'	Not accepted (no score change)

3.2.1 - Fishery-specific objectives	According to the independent report, this PI would only meet SG80 at the regional level and, therefore, a partial score would not be justified.	According to the independent report, this PI would not meet SG100 as regards WCPFC regional management: **WCPFC** – "(…) Because the conservation measures contain reasonably explicit and specific intentions and objectives, and also allow for evaluation of the performance against these objectives, the fisheries meet SG80. However, although broadly measurable, they are not necessarily well-defined particularly in relation to achieving MSC P&C. For skipjack there is now an explicit target set out in 15-06. For bigeye and yellowfin it is also relatively clear, for albacore less so. But for most fisheries, 100 wouldn't be met because there is not a full suite of well-defined and measurable objectives for P2 (…). Objectives may be somewhat vague with respect to determining precise status using reference points, for example, and allowing for unspecified qualifications. Certain resolutions and conservation measures might be presumed to achieve MSC objectives, but it is not certain. A higher score might be possible should WCPFC develop reference points directly linked to proscribed management action, as would be applied through a harvest control rule, for example. This would need to be evaluated for each specific fishery when undergoing MSC assessment. The scientific advice is based on MSC Principles 1 and 2, because these objectives are implicit in the management of each stock, meeting SG60. In addition, effectively explicit objectives are provided through the conservation and management measures. In most cases, this should meet SG80. However, with the qualifications, it may not be possible to determine whether these are consistent with the requirements of MSC Principles 1 and 2, since they are related to the conservation measure itself rather than the stocks, species or ecosystem. Therefore, **SG100 cannot be met**."	Medley et al. (2019)	80	The response to 3.2.2 is similar to 3.1.3, above. The team is in agreement with the stakeholder comment regarding the score for the WCPFC (i.e. SG80), but a partial score has been awarded because the fishery specific management policy of the Solomon Islands reached SG100. A score of SG100 has been awarded for the Solomon Islands because of the goals outlined in the Fisheries Management Act 2015.	Not accepted (no score change)

MSC Technical Oversight (with SCS responses)

Page Reference	Grade	Requirement Version	Oversight Description	Pi	CAB Comment
129	Guidance	FCR_7.12.1.4 v2.0	Table 18 - A risk identified is that – 'Another area of risk is potential substitution if vessels commence a fishing trip with fish remaining in the holds, which may have been from non-certified waters. To remove this risk, vessels will be required to fully offload all catch prior to initiating another fishing trip.' – How is it verified that catch will be fully offloaded e.g. inspections?		Text has been added to clarify that the first receivers of the product will be doing the verification and can ensure that the quantity offloaded equals the quantity caught. MFMR also physically boards 100% of vessels (pre and post offload) and this ensures an additional check that any catch from holds in a previous trip would need to be recorded separately, and would not show up as 'catch' in the trips logbook.
	Guidance	FCR_7.12.1.1 v2.0	- Fishery Operations (p.7) overview also lists bigeye tuna as a species in the area - how is this identified from other tuna species within the UoA as it is not referenced within the traceability section? Also can you please clarify if the buyers CoC includes sorting by species and size.		Buyers CoC includes sorting by species and size, and this text has been included. Ability to distinguish between bigeye and certified species is the responsibility of the CoC certificate, as no sorting occurs onboard the vessels.
	Minor	FCR-7.12.2.1 v2.0	There does not appear to be a list of vessels or even a reference to such a list		Vessel list with name, flag state, and flag state registration number has been added in section 3.1.1 UoA and Certifications sought.
245-257	Minor	FCR-PB3.1 v2.0	Condition 1-4: The condition milestones given for the UoAs do not seem to reflect those as per Appendix 2 of the CAB wide variation request for the harmonisation of condition milestones. In Appendix 2 WCPO both stocks have a condition end date for PI 1.2.1 and PI 1.2.2 of 2021. The team note this in a footnote on Page 245 that the milestones for the Solomon Islands longline assessment are set one year after the harmonised year. However, this footnote and the harmonised condition milestone of 2021 do not reflect the language in the milestones where the team state "a	1.2.1, 1.2.2,	This was an error and the wording has been fixed; Year 4 has been corrected to Year 3 for the Principle 1 milestones.

			harvest strategy meeting the MSC SG80 requirements is required by Year 4."		
241	Minor	FCR-7.10.6.1 v2.0	PI 3.2.4 (si b). It is not clear from the rationale how regularly the WCPFC reviews are conducted.	3.2.4,	We have revised the rationale to include the statement that there is no regular external review for WCPFC. Instances of when two reviews were conducted are in the rationale.
176	Major	FCR-7.10.6.1 v2.0	PI 2.1.2 (si e); 2.2.2 (si e): The SI guideposts at SG100 require that fisheries consider all "unwanted" catch (e.g. any/all catch which is classified as unwanted which may be discarded). The rationale provided by the team only considers "Main" species.	2.1.2, 2.2.2,	SG100 is not evaluated as other scoring issues do not reach the 80 level. Therefore only main species need to be considered.
180	Major	FCR-7.10.6.1 v2.0	PI 2.2.1 (si a): Sardine (Bait) – it's unclear how the team have defined the "biologically based limits" for the bait species.	2.2.1,	We have revised the rationale to firstly indicate the high productivity of goldstripe sardine, the likely bait species. The restricted scale of the fishery can be considered a measure to constrain the amount of bait. We have not defined biologically based limits for the bait nor concluded that the bait is within such limits. Instead the rationale argues that there are measures that ensure that the quantity of bait used in the UoA is sufficiently small as to not hinder rebuilding, should that be required.
184	Major	FCR-7.10.6.1 v2.0	PI 2.2.1 (si d) - Shark finning. It's unclear how the team have reconciled the UoA observer coverage (e.g.<2%) with the guidance (GSA 2.4.5) in support of the SG80.	2.2.2,	The rationale has been revised to indicate the greater emphasis placed on port inspections of all offloads as good external validation of the absence of shark finning.

180	Major	FCR-7.10.6.1 v2.0	SA 3.4.2 (Primary and Secondary Species): Critical Guidance GSA 3.4.2. states, "..The overall intent when designating 'main' species, is that there should be a good understanding of the long-term average catch composition of P2 species of the UoA.."; "..further.. This should include taking into account the variability of the catch composition over the last five years or fishing seasons and recognizing that some species might be 'main' some years but not in others". In this context its unclear how the team have considered this Guidance with respect to designation of the Main species .		Data for five years were provided, however, (see Table 3 for the target species) and were reviewed to verify that including data from earlier years would not have made any difference to the classification of any species for MSC scoring purposes. The inter-annual variability is not sufficient to have made any material difference to how species would have been classified and using only the more recent two years of data for P2 means that the scoring has been based on data that better reflects current fishing practices. For bait species, an average weight of bait and hooks-per-day(and cross-validation with import records for 3-years) was used to calculate the average bait use. Given the large proportion of bait relative to the catch (i.e. 30%), and the range of annual bait use considered (i.e. 400-800t), a sufficient number of years were determined to have been assessed to take into account the long-term average catch composition of P2 species.
	Minor	FCR-7.10.6.1 v2.0	PI 2.4.2. (si a) Its unclear how the team have considered the impact of gear loss as per GSA 2.4.2.	2.4.2,	Additional text has been added to include consideration of potential impacts from gear loss.

Appendix 4 Surveillance Frequency

The surveillance program is set at Level 6: Default Surveillance. The timing of the audit is considered is described below, and was confirmed at the PCR stage.

Table 40. Surveillance level rationale

Year	Surveillance activity	Number of auditors	Rationale
1-4	On-site audit	2 or more auditors	In accordance with FCRV2.0 7.23.4 and based on the number of conditions and information needed to verify progress. Note, the on-site audit may not necessarily include in person meetings with representatives of all management systems relevant to the UoA.

Table 41. Timing of surveillance audit

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
2020	November 2019	Within six months of the certificate anniversary date	To be held in compliance with timing requirements put forth in FCRV2.0 7.23.6

Table 42. Fishery Surveillance Program

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 5 Objections Process

Not Applicable. No objection received.