

Marine Stewardship Council (MSC) Public Certification Report

French Polynesia albacore and yellowfin longline fishery

On behalf of the Direction des Ressources Marines et Minières

Prepared by ME Certification Ltd

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Glossary

Term/acronym	Definition
ACAP	Agreement on the Conservation of Albatrosses and Petrels
Bo	Equilibrium unexploited total biomass
B _{Fcurrent}	Equilibrium total biomass at Fcurrent
BET	Bigeye tuna
B _{init}	Initial biomass at the start of the stock assessment model (for the albacore assessment, B1960)
B _{MSY}	Equilibrium total biomass at MSY
САВ	Conformity Assessment Body
ССМ	WCPFC Commission Members, Cooperating non-Members, and participating Territories
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
СММ	WCPFC Conservation and Management Measure
CNM	WCPFC cooperating non-member
CoC	Chain of Custody
CPUE	Catch Per Unit Effort
DIREN	Directorate of the Environment (French Polynesia)
DPAM	Consultative and Disciplinary Commissions for fisheries dispute resolution
DRMM	Directorate of Marine and Mining Resources (French Polynesia)
EAFM	Ecosystem Approach to Fisheries Management
EEZ	Exclusive Economic Zone
ENSO	El Niño Southern Oscillation
eNGO	Environmental Non-Governmental Organisation
ERA	Ecological Risk Assessment
ETP	Endangered, threatened or protected species
FAD	Fish Aggregating Device
FAME	SPC Division of Fisheries, Aquaculture and Marine Ecosystems
FAM	Fishery Assessment Methodology (MSC scheme document)
FAO	Food and Agricultural Organization
Fcurrent	Average fishing mortality at age
FCR	Fisheries Certification Requirements (MSC scheme document)



FFA	Pacific Islands Forum Fisheries Agency
FFC	Forum Fisheries Committee
FIP	Fishery Improvement Programme
FMSY	Fishing mortality at age resulting in MSY
HCR	Harvest Control Rule
IMO	International Maritime Organization (IMO) number (for vessel)
IPOA	International Plan of Action
ISC	International Scientific Committee for Tuna and Tuna like Species in the N. Pacific Ocean
ISSF	International Seafood Sustainability Foundation
IUCN	International Union for the Conservation of Nature
IUU	Illegal, Unreported, Unregulated
LRP	Limit Reference Point
LTL	Low Trophic Level (species)
MCS	Monitoring Control and Surveillance
MEC	ME Certification Ltd
MEP	MacAlister Elliott and Partners Ltd
MEY	Maximum Economic Yield
MPF	Ministry for Primary Resources Development
MOW	WCPFC Management Options Workshop
MSC	Marine Stewardship Council
MSE	Management Strategy Evaluation
MSY	Maximum Sustainable Yield
MSY, Y _{FMSY}	equilibrium yield at FMSY
NFMS	US National Marine Fisheries Service (NOAA Fisheries)
Nm	Nautical mile
NOAA	US National Oceanic and Atmospheric Administration
NPOA	National Plan of Action
NTADS	Non-target and dependent species
OFP	Oceanic Fisheries Programme (OFP) within the SPC Division of Fisheries, Aquaculture and Marine Ecosystems
OP	Organization of Producers (of fish)
PCDR	Public Comment Draft Report
PCR	Public Certification Report



PI	Performance Indicator (of the MSC Standard)
PICI	Pacific Islands Conservation Initiative
PICs	Pacific Island Countries
PIF	Pacific Islands Forum
PITIA	Pacific Islands Tuna Industry Association
PNA	Parties to the Nauru Agreement
PRC	People's Republic of China
PRI	Point of Recruitment Impairment
PROCFISH	The Pacific Regional Oceanic and Coastal Fisheries project (SPC)
PSA	Productivity Susceptability Analysis
PTAC	Party Total Allowable Catch
RFMO	Regional Fisheries Management Organization
SB ₀	Equilibrium unexploited spawning potential
SBF _{current}	Average current spawning potential in the absence of fishing
SB _{init}	Initial spawning potential at the start of the stock assessment model
SC	WCPFC Scientific Committee
SEAPODYM	Spatial Ecosystem and Population Dynamics Model
SG	Scoring Guidepost
SIDS	Small Island Developing States
SP	Spawning potential - equivalent measure to spawning stock biomass under the assumption that reproductive output is proportional to biomass over the size at maturity – but can take account of other patterns of reproductive output
SPALB	South Pacific albacore tuna
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
SRP	WCPFC Strategic Research Plan
SSB	Spawning Stock Biomass
STCW-95	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (1995 version)
STCW-F	International Convention on Standards of Training, Certification and Watchkeeping for Fishing Vessel Personnel (2012)
TAC	Total Allowable Catch
TCC	Technical Compliance Committee of the WCPFC
TRP	Target Reference Point
UNCLOS	United Nations Convention on the Law of the Sea



UNFSA	United Nations Fish Stocks Agreement or simply the FSA
UoA	Unit of Assessment
UoC	Unit of Certification
VDS	Vessel Day Scheme
VME	Vulnerable marine ecosystems
VMS	Vessel Monitoring System
WCPFC	Western and Central Pacific Fisheries Commission
WCPO	Western and Central Pacific Ocean
WWF	Worldwide Fund for Nature
Y _{Fcurrent}	Equilibrium yield at F _{current}
YFT	Yellowfin tuna



Executive Summary

This report covers the MSC full assessment of yellowfin tuna (*Thunnus albacares*) and albacore tuna (*Thunnus alalunga*) for French Polynesia (DRMM) licensed vessels fishing in the EEZ of French Polynesia using pelagic longline. The assessment team consisted of Jo Gascoigne (Team Leader, Principle 1), Chrissie Sieben (Principle 2) and Charles Daxboeck (Principle 3). A site visit was held on the 16th – 20th January 2017 in Tahiti. The assessment was undertaken in accordance with the MSC Fisheries Certification Requirements (FCR) version 2.0 for assessment procedure and scoring. The Risk-Based Framework (RBF) was not used in this assessment.

The DRMM manages the exploitation of marine resources within the EEZ, and enforces the Ministerial Decree 1914/CM of the 25th November 2011. Policies exist, but have yet to be formalised by a cohesive management plan. French Polynesia is a "participating territory" of the WCPFC Pacific RFMO.

A key strength of the fishery is that the overall fisheries management strategy in French Polynesia is very precautionary. The offshore fishing fleet is small relative to the size of the EEZ, and foreign vessels are not licensed, leaving many areas almost unfished. Purse seining is banned throughout the EEZ. On a practical level (e.g. consultation, decision-making, monitoring, enforcement) the national management system is very effective, although some elements of the formal management framework (e.g. formal agreed objectives) are lacking. The main weakness of the fishery relates to the international management context. WCPFC has been working towards a formal harvest strategy for its key stocks, but progress against the agreed workplan has been slow; decision-making does not deal with all important issues. French Polynesia also has problems with formally incorporating WCPFC CMMs into its national legislation, although the team was satisfied that all relevant CMMs are implemented in practice. The French Polynesia EEZ straddles the Convention Areas of WCPFC and IATTC, which is relevant for yellowfin (albacore is a shared stock); hence both international management frameworks are dealt with under P1. For P2 and P3, the assessment only considers the international framework provided by WCPFC, for reasons which are explained in the report.

Principle	Score UoA1 (SP ALB)	Score UoA2 (WCPO YFT)	Score UoA3 (EPO YFT)
Principle 1 – Target Species	84.1	80.8	89.1
Principle 2 – Ecosystem	86.3	86.3	86.3
Principle 3 – Management System	82.7	82.7	82.7

The final determination is that the fishery meets the criteria for MSC certification. Aggregate scores for each Principle are as shown in the following table:



Nine conditions are raised: four on Principle 1, three on Principle 2 and two on Principle 3. For Principle 2 the conditions relate to ETP interactions with the fishery while for Principle 1 and 3 one of the conditions relates to the French Polynesia management system, and five to the international management framework (WCPFC). The proposed conditions are as follows:

No.	Condition	Performance Indicator
1	South Pacific albacore needs a harvest strategy that is responsive to the state of the stock, with and the elements of the harvest strategy (monitoring, stock assessment, harvest control rules and management actions) working together to achieve stock management objectives.	1.2.1 (South Pacific albacore)
2	South Pacific albacore needs a harvest control rule that ensures that the exploitation rate is reduced as the PRI is approached and is expected to keep the stock fluctuating around the target level and robust to the main uncertainties. The tools used to implement the HCR should be effective in achieving the required exploitation levels.	1.2.2 (South Pacific albacore)
3	CPO yellowfin needs a harvest strategy that is responsive to the state of the stock, with and the elements of the harvest strategy (monitoring, stock assessment, harvest control rules and management actions) working together to achieve stock management objectives	1.2.1 (WCPO yellowfin)
4	WCPO yellowfin needs a harvest control rule that ensures that the exploitation rate is reduced as the PRI is approached and is expected to keep the stock fluctuating around the target level and robust to the main uncertainties. The tools used to implement the HCR should be effective in achieving the required exploitation levels.	1.2.2 (WCPO yellowfin)
5	The evidence base for determining interaction rates with ETP species, in particular seabirds and turtles, should be improved so that trends in interactions can be measured over time and so that it can be determined whether the UoA may be a threat to protection and recovery of the ETP species. Should a potential threat be identified, the fishery should demonstrate that the current ETP management strategy in place is adequate to ensure direct effects of the UoA are highly likely to not hinder recovery of ETP species.	2.3.1
6	The client should provide evidence that all relevant national and regional regulations on fishery interactions with ETP species are adhered to by the UoA so that it can	2.3.2



No.	Condition	Performance Indicator
	be demonstrated that the fishery does not hinder recovery of ETP species.	
7	The evidence base for determining interaction rates with ETP species, in particular seabirds and turtles, should be improved so that trends in interactions can be measured over time and so that it can be determined whether the UoA may be a threat to protection and recovery of the ETP species. Should a potential threat be identified, the fishery should demonstrate that the current ETP management strategy in place is adequate to ensure direct effects of the UoA are highly likely to not hinder recovery of ETP species.	2.3.3
8	The client should ensure that short and long-term objectives, consistent with the outcomes expressed by MSC's Principles 1 and 2, are explicit within the French Polynesia management system. This may be done via the promulgation of a codified national fishery management plan, as proposed during the site visit, or by any other suitable means. The objectives should be responsive to amendments as needed to accommodate WCPFC CMMs, and take account of the general provisions of the Honolulu Convention (2000).	3.2.1
9	At the Commission level, decision-making processes should respond to important issues, and specifically to the declining catch rates of South Pacific albacore, in a transparent, timely and adaptive manner. This could be done by implementing a formal harvest strategy, as set out in CMM 2014-06 and in Condition 1, or by some other means if appropriate.	3.2.2



Résumé

Ce rapport concerne l'évaluation MSC du thon jaune/albacore (*Thunnus albacares*) et du germon/thon blanc (*Thunnus alalonga*) pour les navires autorisés à pêcher à la palangre dans la ZEE de la Polynésie française. L'équipe d'audit est composée de Jo Gascoigne (Team Leader, Principe 1), Chrissie Sieben (Principe 2) et Charles Daxboeck (Principe 3). La visite du site a eu lieu entre le 16 et 20 janvier 2017 à Tahiti. L'évaluation suit la version 2.0 des "MSC Fisheries Certification Requirements" (FCR) pour la procédure et l'évaluation. Le "Risk-Based Framework" (RBF) n'a pas été utilisé pour cette évaluation.

Le DRMM gère l'exploitation des ressources marines dans la ZEE polynésienne. Ses missions et son organisation sont définies par l'arrêté en conseil des ministres n° 1914/CM du 25 novembre 2011. Certaines politiques existent, mais ne sont pas encore regroupées dans un plan de gestion cohésif. La Polynésie Française est un "territoire participant" au WCPFC.

Un atout majeur de cette pêcherie est la stratégie de gestion précautionneuse, consistant en une flotte qui est relativement petite comparée à l'étendue de la ZEE; de plus, aucun navire étranger n'est autorisé à pêcher dans la zone. Ainsi, la majorité de la ZEE n'est pas pêchée. La pêcherie à la senne est également interdite dans la ZEE polynésienne. Sur le niveau pratique (consultations, prise de décisions, surveillance), le système de gestion national est très efficace, malgré un manque d'objectifs officiels pour la pêcherie. La faiblesse principale de cette pêcherie concerne la gestion internationale. La WCPFC tente d'établir une stratégie d'exploitation officielle pour ses stocks, mais les progrès sont lents et les décisions prises ne traitent pas les problèmes les plus importants. La Polynésie française rencontre des difficultés quant à l'incorporation des CMM de la WCPFC dans la réglementation locale ; cependant, l'équipe est convaincue que les CMM pertinentes sont appliquées de manière volontaire. La ZEE de la Polynésie française se situe à cheval entre les zones WCPFC et IATTC. Cette division est pertinente pour les stocks d'albacore (le stock de germon est partagé); il est donc nécessaire de tenir compte des cadres de gestion WCPFC et IATTC pour le Principe 1. Pour les Principes 2 et 3, l'évaluation ne tient compte que du cadre de gestion WCPFC – cette décision est expliquée par la suite dans le rapport.

Principe	Score UoA1 (SP ALB)	Score UoA2 (WCPO YFT)	Score UoA3 (EPO YFT)
Principe 1 – Espèce cible	84.1	80.8	89.1
Principe 2 – Ecosystème	86.3	86.3	86.3
Principe 3 – Système de Gestion	82.7	82.7	82.7

La décision finale est que cette pêcherie accède à la certification MSC. Les scores de chaque Principe sont listés ci-dessous:

Neuf conditions sont soulevées; quatre sur le Principe 1, trois sur le Principe 2 et deux sur le Principe 3. Les conditions du Principe 2 concernent les interactions avec les espèces ETP ou emblématiques. Pour les Principes 1 et 3, une condition repose sur le système de gestion



polynésien, les cinq autres concernent le cadre de gestion international (WCPFC). Les conditions proposées sont les suivantes:

Nb.	Condition	Indicateur de Performance
1	Une stratégie d'exploitation qui tient compte de l'état du stock est nécessaire pour le germon du sud du Pacifique. Les divers éléments de la stratégie (surveillance, évaluation des stocks, contrôle de l'exploitation) doivent converger pour atteindre les objectifs du plan de gestion.	1.2.1 (Germon du sud du Pacifique)
2	Une règle de contrôle de l'exploitation (HCR) qui assure que l'effort de pêche sera réduit quand les stocks s'approchent du PRI (point de défaillance de recrutement) est nécessaire pour le germon du sud du Pacifique. Cette réglementation doit être robuste face aux incertitudes principales associées à cette pêcherie, et doit assurer que le stock demeure à un niveau durable. Les méthodes employées pour établir la HCR doivent assurer le maintien de ce niveau d'exploitation.	1.2.2 (Germon du sud du Pacifique)
3	Une stratégie d'exploitation qui tient compte de l'état du stock est nécessaire pour l'albacore WCPO. Les divers éléments de la stratégie (surveillance, évaluation des stocks, contrôle de l'exploitation) doivent converger pour atteindre les objectifs du plan de gestion.	1.2.1 (albacore WCPO)
4	Une règle de contrôle de l'exploitation (HCR) qui assure que l'effort de pêche sera réduit quand les stocks s'approchent du PRI (point de défaillance de recrutement) est nécessaire pour l'albacore WCPO. Cette réglementation doit être robuste face aux incertitudes principales associées à cette pêcherie, et doit assurer que le stock demeure à un niveau durable. Les méthodes employées pour établir la HCR doivent assurer le maintien de ce niveau d'exploitation.	1.2.2 (albacore WCPO)
5	La base de données des interactions de la pêcherie avec les espèces ETP (les oiseaux et tortues en particulier) doit être améliorée dans l'esprit de pouvoir quantifier les interactions au fil du temps pour déterminer si la pêcherie met en danger ou empêche le rétablissement de ces espèces. Si les résultats indiquent que la pêcherie met en danger des espèces ETP, la pêcherie doit démontrer que le plan de gestion ETP est adéquat pour assurer que les effets directs de	2.3.1



Nb.	Condition	Indicateur de Performance
	l'UoA n'empêchent pas la récupération des espèces ETP.	
6	Le client doit confirmer que toute régulation nationale et régionale pertinente aux interactions ETP remporte l'adhésion de l'UoA, pour démontrer que la pêcherie n'empêche pas la récupération des espèces ETP.	2.3.2
7	La base de données des interactions de la pêcherie avec les espèces ETP (les oiseaux et tortues en particulier) doit être améliorée dans l'esprit de pouvoir quantifier les interactions au fil du temps pour déterminer si la pêcherie met en danger ou empêche le rétablissement de ces espèces. Si les résultats indiquent que la pêcherie met en danger des espèces ETP, la pêcherie doit démontrer que le plan de gestion ETP est adéquat pour assurer que les effets directs de l'UoA n'empêchent pas la récupération des espèces ETP.	2.3.3
8	Le client doit assurer que les objectifs de durabilité des Principes 1 et 2 à court et à long terme sont explicites dans le système de gestion de Polynésie Française. Ceci peut prendre la forme d'un plan de gestion formel national (proposé lors de la visite de site), ou par un autre moyen convenable. Les objectifs devraient pouvoir répondre à des modifications nécessaires pour s'adapter aux CMM de la WCPFC, et doivent tenir compte des mesures générales de la Convention de Honolulu (2000).	3.2.1
9	Au niveau de la Commission, les processus de prises de décisions doivent répondre de manière transparente et immédiate aux problèmes majeurs, notamment la baisse des taux de capture du germon du sud du Pacifique. Ceci pourrait être accompli en imposant une stratégie d'exploitation formelle décrite dans CMM 2014-06 et en Condition 1, ou par un autre moyen convenable	3.2.2



1 Authorship and Peer Reviewers

The assessment team for this full assessment were:

Dr. Jo Gascoigne (Team Leader, Principle 1): Jo Gascoigne is a former research lecturer in marine biology at Bangor University, Wales. She is an expert on fisheries science and management, with over 15 years' experience as a consultant, working mainly on MSC preassessments and full assessments, as well as FIP scoping, planning and implementation. Jo has been involved as expert and lead auditor in the majority of MEP's and MEC's full MSC assessments and numerous pre-assessments. She regularly participates in the MSC training sessions and workshops. In addition to numerous pre-assessments, Jo's experience with tuna fisheries includes the SZLC, HNSFC & CFA Cook Islands EEZ south Pacific albacore longline fishery and the Walker Seafood's Australian Eastern tuna and billfish tuna fishery. She was also invited to participate in the recent Hong Kong Harmonisation meeting for WCPFC tuna stocks. Dr Gascoigne was the team leader for this assessment and had primary responsibility for the assessment of Principle 1.

Chrissie Sieben (Principle 2): Chrissie Sieben has a Master's Degree in Marine Environmental Protection which she obtained at the University of Wales, Bangor. She is the MSC Fisheries Scheme Manager at MEC and specialises in marine and fisheries ecology, marine environmental impact assessment and sustainable fisheries. Previous to joining MEC, she worked as a fisheries consultant for MacAlister Elliott and Partners (MEP), where she worked on a number of projects including the application of WWF Common Methodology to wild capture and aquaculture fisheries for the WWF Hong Kong 'Good Fish Guide', Sustainable fisheries in the Trilateral Wadden Sea, acted as Fisheries Liaison for the London Gateway Project and carried out socio-economic characterisations and impact assessments of commercial fisheries for coastal developments. Prior to her work at MEP, she worked inter alia as a marine ecologist on environmental impact assessments (EIAs) and completed an internship with the Global Environment Facility / UNDP International Waters Programme. She is a fully qualified MSC Team Leader with particular expertise in Principle 2 and is involved in MSC full assessments, pre-assessments and fishery surveillance audits.

Dr. Charles Daxboeck (Principle 3): Charles Daxboeck has a Ph.D. in comparative respiratory physiology from the University of British Columbia, Vancouver and has been a legal resident of French Polynesia for the past 22 years, after twelve years in Hawaii. He has built up a vast amount of experience with his work taking him all over the world. In 2007, he was a member of the US delegation to the 19th Annual Consultation on Multilateral Treaty on Fisheries between Governments of certain Pacific Island States and the US Government - and the following year to the Fourth Regular Session of the Scientific Committee of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean. He has also been a member of French Polynesian delegations to numerous pre-WCPFC ratification meetings (MHLC4, 5, 6 and 7, PrepCon I, PrepCon 7, then WCPFC1 and WCPFC6 from 1999 to 2009), as member of the American Samoa delegation to WCPFC7 (2010) and recently as a member of the CNMI delegation to WCPFC13 (2016). His experience also includes being a Member of the Board of Governors and of the Scientific Advisory Committee of the Pacific Ocean Research Foundation, Kailua-Kona, Hawaii (P.O.R.F.) for six years and for thirty-three years he has been a member of the Scientific and Statistical Committee (and SSC Chairman from 2011 to 2016), Western Pacific



Regional Fishery Management Council (Department of Commerce, NOAA, National Marine Fisheries Service). Charles had primary responsibility for the assessment of Principle 3.

All team members are fluent in French as well as English, bringing full language flexibility to the assessment process.

The peer reviewers for this assessment were as follows:

Peter Trott

Prior to co-founding FishListic, Peter had been with WWF-Australia fisheries programme for over eight years, where he led work on international and domestic seafood markets, providing technical expert advice concerning imported and domestic seafood products, supply chains and traceability.

Peter was the architect of developing and establishing several key strategic seafood market partnerships between WWF and a major Australian seafood retailer (Coles), brand owners (John West, Birdseye, I&J, Blackmores) and aquaculture companies (Tassal). He has attended numerous international fisheries forums as a member of Australian Government delegations, including at meetings of Regional Fisheries Management Organisation's for tunas at the Western and Central Pacific Fisheries Commission and the Indian Ocean Fisheries Commission. Peter has also worked in fisheries management with two Australian state fisheries agencies (Tasmania and Western Australia) managing sharks, squid, octopus, small pelagics, rock lobster, and scalefish. Peter has over 15 years' experience in fisheries management, resource sharing, ecosystem principles, seafood markets and supply chains.

Peter holds a Bachelor of Science in Fisheries Management and Aquaculture and an Honors degree in Aquatic Sciences (aquaculture systems and disease) from Deakin University.

Dr. Johan Groeneveld

Johan Groeneveld is a marine biologist with over 20 years' experience working in marine fisheries and their impacts on target and bycatch species, and on marine environments. He obtained a PhD in marine ecology in 2001 at the University of Cape Town in South Africa, and currently works as a Senior Scientist at the Oceanographic Research Institute in Durban, where he is also an Honorary Associate Professor at the University of KwaZulu Natal.

His previous experience includes 12 years as a government scientist tasked with applied fisheries research and management of commercial spiny lobster fisheries in South Africa. He spent 2 years as a specialist fisheries advisor to the fisheries ministry in the Sultanate of Oman. He regularly undertakes consulting projects to the private sector, including for the fishing industry and clients such as the World Bank, UNEP, and the FAO. Johan has worked extensively on collaborative fisheries development projects, particularly at a regional scale in the Western Indian Ocean. He has a strong publication record in a range of peer-reviewed journals, and is also on the editorial board of the journals 'Fisheries Research', and 'Western Indian Ocean Journal of Marine Science'. He has written, or contributed to numerous technical reports dealing with fisheries assessments, marine environmental management and research capacity development.



He has participated as an assessor in the MSC certified Tristan da Cunha spiny lobster fishery, and in the recent re-assessment of the deep-sea hake trawl fishery in South Africa. At the request of the fishing industry, he was recently (2015) tasked with investigating the potential of an 'Extension of Scope' assessment for the hake trawl fishery, to include bycatch species under the existing MSC certificate. Johan has participated as a peer-reviewer for the Normandy and Jersey lobster fishery, and has been involved in several MSC pre-assessments in southern and eastern Africa, including for lobster and octopus fisheries. He has also attended and given presentations at MSC training workshops in South Africa.

The Risk-Based Framework was not used in this assessment.



2 Description of the Fishery

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

2.1.1 UoA and Proposed Unit of Certification (UoC)

MEC confirms that the fishery under assessment is within the scope of the MSC Fisheries Standard (7.4 of the MSC Certification Requirements v2.0):

- The target species is not an amphibian, reptile, bird or mammal;
- The fishery does not use poisons or explosives;
- The fishery is not conducted under a controversial unilateral exemption to an international agreement;
- The client or client group does not include an entity that has been successfully prosecuted for a forced labour violation in the last 2 years;
- The fishery has in place a mechanism for resolving disputes, and disputes do not overwhelm the fishery;
- The fishery is not an enhanced fishery as per the MSC FCR 7.4.3; and
- The fishery is not an introduced species-based fishery as per the MSC FCR 7.4.4.

The UoC and UoA are the same in this assessment as there are no other eligible fishers. The UoA is described in Table 1.

Species	UoA1: Albacore tuna (<i>Thunnus alalunga</i>) UoA2 and 3: Yellowfin tuna (<i>Thunnus albacares</i>)
Geographical range	French Polynesia Exclusive Economic Zone
Method of capture	Pelagic longline
Stocks	UoA1: South Pacific albacore, UoA2: Western Central Pacific Ocean yellowfin UoA3: Eastern Pacific Ocean yellowfin
Management Systems	WCPFC and French Polynesia management systems
Client group	French Polynesia (DRMM) licensed vessels fishing in the EEZ of French Polynesia for albacore and yellowfin using pelagic longline
Other eligible fishers	None

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2.1.2 Final UoC(s)

The final UoCs are described in Section 2.1.1.

2.1.3 Total Allowable Catch (TAC) and Catch Data

The fishery is not managed via TACs and quotas. Landings for the two species are given below (Table 2). For albacore, catches are all on one stock (South Pacific albacore). For yellowfin, the French Polynesia EEZ is divided between the Convention Area for WCPFC corresponding to the Western Central Pacific (WCPO) stock and the Convention Area for IATTC corresponding to the Eastern Pacific (EPO) stock. Approximately 20 % of yellowfin catches comes from the west of 150°W (the dividing line between both stocks). Considering the boundary has been set for reasons of management not biology (see Section 2.3.1) and both yellowfin stocks are inseparable from each other in catches, the landings data in Table 2 are shown by species rather than stock.

Table 2. Landings Data (t) Source: DRMM

Year	Albacore	Yellowfin
2013	3396	594
2014	2905	758
2015	3367	1069

2.1.4 Scope of Assessment in Relation to Enhanced Fisheries

The MSC defines enhanced fisheries as: Any activity aimed at supplementing or sustaining the recruitment, or improving the survival and growth of one or more aquatic organisms, or at raising the total production or the production of selected elements of the fishery beyond a level that is sustainable by natural processes. It may involve stocking, habitat modification, elimination of unwanted species, fertilisation or combinations of any of these practices.

The fishery under assessment is a wild capture fishery and does not meet the criteria for enhanced fisheries (see FCR v2.0 7.4).

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

The MSC defines Introduced Species Based Fisheries (ISBF) as: Any fishery which prosecutes a target fin or shellfish species that was intentionally or accidentally transported and released by human activity into an aquatic environment beyond its natural distribution range. This does not include species that are "introduced" into a location due to an expansion in their natural geographic range. The fishery is not an ISBF (see FCR v2.0 7.4).



2.2 Overview of the fishery

2.2.1 The Client fishery

The client fishery covers the vessels licensed by the French Polynesia Directorate of Marine and Mining Resources (*Direction des Ressources Marines et Minières* - DRMM) (see Table 3), fishing exclusively in the EEZ of French Polynesia for albacore and yellowfin using pelagic longline.

Licences are awarded on a permanent basis, except for changes in ownership and/or following major renovations to the vessel equipment or use. Most but not all of the vessel owners/managers are members of a legally-registered Cooperative (formed in 2008 - *la Coopérative Maritime des producteurs de pêche Hauturière de la Polynésie française*; S.A.R.L. CMPPHPF or *Organisation des Producteurs* - OP for short). There is however, no legally binding obligation to adhere to this organization to maintain a vessel fishing permit; it is more of a fishery trade association. There are currently 59 vessels active in 2016. The highest number of active vessels in the fishery was in 2004 with 75 licences in place.

The 75 licensed vessels are shown in Table 3. They range in size from 14 m - 25 m and typically have a Polynesian or European crew although all carry a French Polynesian flag. They are all fresh fish vessels with the exception of one which uses its freezer capacity as indicated in Table 3.



Table 3. Registered client longline vessels in the fishery. *freezer vessel

VID	Vessel Name	Registration Number	IRCS	Overall Length (m)	Tonnage (GRT)	Engine Power (HP)
5199	AORAI	PY 1327	FPDN	20.50	35.34	165
5467	ARIIMOANA	PY 1976	FQCQ	14.7	44.3	390
5575	ARIITAI NUI	PY 2083	FZFM	14.7	44.3	400
5476	AVA ITI II	PY 2032	FQEQ	20.7	99.03	450
5468	EDDY V	PY 1977	FQCR	14.7	44.3	390
5474	FAI MANU 1	PY 1988	FOZJ	14.75	38.74	340
5478	FAI MANU III	PY 2042	FQRX	23.80	136.99	560
5246	FETU	PY 1722	FODH	16.16	45.16	330
5585	FETU MANA	PY 2133	FKYH	21.5	99.82	660
5454	FETU TEA II	PY 1800	FOAU	24.95	149.81	900
5455	FETU URA	PY 1801	FKGH	24.95	149.81	740
5240	HEIMANA 3	PY 1612	FKRA	16.76	30.73	360
5588	SANTA RAISSA	PY 2167	FMCB	20.4	89.48	480
5577	IRAULTZA	PY 2085	FZJQ	16.2	42.17	400
5460	IRIHONU	PY 1809	FHPK	13.7	30.56	300
5457	KATHE	PY 1805	FOVD	13.7	30.56	340
5472	KATHE II	PY 1981	FQES	14.7	44.3	390
5207	KEHEI	PY 1533	FKNN	18.75	37.3	1050
5584	KEYLANI	PY 2129	FZOW	18.3	35	445
5205	KHAYA STAR	PY 1516	FKDA	16.16	45.16	350
5576	LADY CHRIS 3	PY 2084	FZHW	14.7	44.3	445
5589	LADY CHRIS 4	PY 2187	FZUF	14.9	44.3	400



VID	Vessel Name	Registration Number	IRCS	Overall Length (m)	Tonnage (GRT)	Engine Power (HP)
11292	LADY CHRIS 5	PY 1626	FKTD	20.5	97.97	450
11615	LADY CHRIS 6	PY 2648	FJYF	21.00	70.00	829
11668	LADY CHRIS 7	PY 2670	FLBO	16.5	42.17	441
5462	MAIRIPEHE 2	PY 1811	FHRR	13.7	30.56	340
5458	MARYBEL	PY 1806	FOVE	13.7	30.56	340
5574	MATA'U II	PY 2068	FZED	20.7	99.03	400
5479	MEHERIO I	PY 2043	FQRP	23.80	136.99	550
5571	MEHERIO XII	PY 2061	FTCX	23.80	164.00	560
5459	MEREANA	PY 1807	FOVF	13.7	30.56	340
5465	MEREANA 8	PY 1974	FOVY	14.75	44.3	390
5464	MEREANA 9	PY 1970	FNUM	20.7	99.03	450
5471	MOKAI	PY 1980	FQER	14.7	44.3	390
5591	MOKAI 2	PY 2189	FZUY	14.85	44.3	400
5243	MOOREA RAVA'AI	PY 1657	FKYD	16.76	30.73	650
5473	MOOREA RAVA'AI III*	PY 1987	FOVS	20.7	99.03	450
5209	MOOREA RAVA'AI IV	PY 1592	FKPI	14	25.44	330
5594	MOOREA RAVA'AI VI	PY 2192	FZWR	21.2	97.35	400
5251	MOOREA TAUTAI	PY 1728	FOKH	24.8	154	450
5590	NARIITEA V	PY 2188	FZUK	14.9	44.3	400
11384	PHOENIX	PY 2614	FIXK	13.70	30.56	350
11313	PUA O TUA	PY 1515	FKCZ	16.08	45.16	330
5463	PUONO	PY 1812	FHRT	14.75	38.74	340
5593	RAVA'AI NUI I	PY 2191	FZWG	21.2	98	400



VID	Vessel Name	Registration Number	IRCS	Overall Length (m)	Tonnage (GRT)	Engine Power (HP)
5601	RAVA'AI NUI II	PY 2223	FMDC	23.90	164.00	560
5602	RAVA'AI NUI III	PY 2224	FMDD	23.90	131.82	560
5600	RAVA'AI NUI V	PY 2222	FMBD	23.90	164.00	560
5242	RIYANI	PY 1620	FKPH	16.76	30.73	650
5200	TAHITI NUI	PY 1405	FGQN	24.8	153.58	440
5249	ΤΑΜΑΤΙΑ	PY 1726	FODY	24.8	153.63	450
5469	TE AITO	PY 1978		14.7	44.3	390
11293	TE AITO 2	PY 2214	FZXR	21.2	97.35	600
5461	TEIRI IRI	PY 1810	FHRK	13.7	30.56	340
5237	TEMOANARAU	PY 1598	FQIU	16.90	55.68	330
5466	TEUKI	PY 1975	FOXK	14.75	44.3	390
9038	TUAANAPA	PY 1808	FHOI	13.7	30.56	340
5480	TUAHEI	PY 2044	FQKK	23.80	136.99	550
5481	TUAHITI	PY 2045	FQKJ	23.80	137.00	550
5573	TUAHOA	PY 2063	FTQE	23.80	164.00	560
5599	Τυαμοτυ	PY 2221	FMDA	23.90	140.40	560
5598	TUAMANA	PY 2220	FZYM	23.90	131.82	560
5482	TUAMARU	PY 2059	FTCF	23.80	164.00	550
5572	TUAMITI	PY 2062	FTCC	23.80	164.00	550
5597	TUARAI	PY 2219	FZYG	23.9	131.82	560
5596	TUARANI	PY 2218	FMDF	23.90	164.00	560
5595	TUARERE	PY 2217	FMDE	23.90	164.00	560
5592	TUBUAI RAVA'AI III	PY 2190	FZVM	16.2	42.17	400



VID	Vessel Name	Registration Number	IRCS	Overall Length (m)	Tonnage (GRT)	Engine Power (HP)
5603	VAEANAPA	PY 2252	FMHE	21.2	97.35	450
5470	VAIANAHOA	PY 1979	FQDW	14.7	44.3	390
5456	VAIPAHU	PY 1804	FOVC	13.7	30.56	340
5239	VAIVAI NUI	PY 1609	FKJT	18.53	53.48	400
5247	VINI VINI II	PY 1724	FOAN	24.8	151.37	450
5587	VINI VINI IX	PY 2166	FMCO	20.7	99.03	400
5475	VINI VINI VII	PY 2031	FQET	20.7	99.03	450



2.2.2 Introduction to French Polynesia

<u>Geography of French Polynesia</u>: French Polynesia has an exclusive economic zone (EEZ) of ~5,030,000 km², with a land area of only 3,521 km². Around 70 % of its EEZ borders on international waters, with the remaining part of the boundary bordering three Pacific countries: Cook Islands to the west, the Republic of Kiribati to the northwest, and Pitcairn Islands to the southeast (see Figure 1).



Figure 1. Map of the EEZ of French Polynesia (source: http://fisherymanagement.wikia.com).

<u>Status of French Polynesia</u>: Between 1946 and 2003, French Polynesia had the status of an overseas territory of France. Under amendments made in 2003 to the Constitution under the Fifth Republic of France, French Polynesia was given wide-ranging powers of local self-regulation whereby the President of French Polynesia is the head of government based on a multi-party system. Within Article 74 of this Constitution, a new statute, or French Polynesian "Constitution", came into force through the loi organique N° 2004-192 of 27 February 2004. This law spells out the basic roles and responsibilities of government and redefined French Polynesia as an "oversees country within the French Republic" (*pays d'outre-mer* as specified in Article 1). It gives the government of French Polynesia executive responsibility for many



areas, including fisheries and other marine resources, and also broadens control over its Exclusive Economic Zone (EEZ). It enables French Polynesia to negotiate and sign in its own right administrative arrangements and some regional cooperation agreements with countries in the Pacific region, with official notitification of granting of such rights from the French Ministry of foreign affairs. Executive power is exercised by both the government and the President. Legislative power is vested in the Assembly of French Polynesia. A high commissioner, appointed by the French central government, represents, as head of state, the French president and all of his government members, and is in charge of matters including defence, foreign relations and justice.

<u>Fisheries in French Polynesia</u>: French Polynesia's fisheries include the offshore fishery for tuna and other pelagic species; several small-scale inshore tuna fisheries, some in association with anchored fish aggregating devices (FADs); the deep-water snapper fishery; reef fisheries for a range of fish and invertebrate species; and aquaculture and/or mariculture of a range of species. Trials have been conducted for surface tunas using the pole-and-line method, but these were limited because French Polynesia was outside the range of the distant-water fleets (Abbes and Bard, 1999).

<u>Fisheries research</u>: Research has been undertaken throughout the EEZ from 1995 to 1999 to study tuna behaviour through the use of acoustics and fishing (ECOTAP Programme). The results have improved knowledge of deep-swimming tunas' habitat and behaviour, with a view to optimizing exploitation. Since then, the DRMM (formerly called *Service de la Pêche*) has conducted exploratory work using commercial vessels in the most poorly known parts of the EEZ. The first exploratory campaign took place in 2005 in the north-eastern part of the EEZ, east of the Marquesas Islands; the second took place in 2006 in the southern part of the EEZ. In 2008 the Service was trying to develop a predictive model that would incorporate environmental and historical fishing data so as to predict zones of yellowfin, bigeye and albacore tuna concentrations (Marc Labelle, Ph.D – fisheries consultant for the Center for Independent Experts) but with very limited success (M. Labelle, pers. comm.).

The Secretariat of the Pacific Community (SPC) Skipjack Survey and Assessment Programme conducted two tagging cruises in the French Polynesian EEZ in 1978/1979 and 1979/1980 (see Abbes and Bard, 1999) where 8,148 skipjack and 98 yellowfin tuna were tagged and released in first the 60-day cruise. During that second 65-day cruise, 20,827 tuna were tagged and released, with the vast majority (18,815 fish) tagged in the Marquesas Islands.

2.2.3 History of the fishery

<u>History of this fishery</u>: The fishery under MSC assessment is the offshore albacore and yellowfin longline fishery. French Polynesia has only become involved in domestic offshore tuna fishing since the late 1980s. Before that, offshore tuna fishing trials or fishing activities were conducted by foreign fishing vessels. Japanese, Taiwanese and Korean longliners fished in the waters around French Polynesia in the mid-1970s, catching ~7000 t a year each respectively (Abbes and Bard, 1999). With the declaration of an EEZ and the issuing of fishing licenses, at first only Japanese longliners operated in the French Polynesian EEZ (Abbes and Bard, 1999). Both Japanese and Korean vessels were licensed to fish in the early 1980s. Japan ceased its access agreement with French Polynesia in 1992, but 65 Korean longline vessels were licensed under their access agreement in 1995. In December 2000, however, all



access agreements with foreign fishing fleets ceased (C. Ponsonnet, Assistant Director DRMM, pers. comm. 2017).

Domestic, semi-industrial oceanic fisheries in French Polynesia began in 1989 with five vessels landing 53 t of fish (Abbes and Bard, 1999). From 1993 to 2001, total oceanic production steadily increased, from 2,256 t to a maximum of 7,342 t in 2001, according to the DRMM Annual Statistics Bulletin (2016). French Polynesia then decided to begin construction of new longliners, banking on an increase in albacore tuna catches (Abbes and Bard, 1999). However, after 2001, production steadily decreased to 4,754 t in 2008, (a 35 % drop in the volume of catches over seven years; WCPFC Part 1 Country Report 2016), mainly due to reduced catches of albacore tuna (the fleet's main target species). These reductions appear to have been associated with climate fluctuations (ENSO), which made access to this resource more complicated for many French Polynesian vessels, which have limited ranges.

At the height of activity in 2004, there were 75 active fishing vessels, made up of mostly fresh tuna boats (ice boats), six mixed tuna vessels (capable of processing both fresh and frozen product) and 26 freezer tuna vessels providing mostly flash-frozen tuna loins. The fleet's activity fluctuated widely over time. However, for the last 10 years the activity has stagnated at around 60 active vessels. By 2015, however, the landed catch increased again to 6,237 t, during which time 61vessels were still active. Albacore tuna yields over the last 2 years were around 3,000 t, representing 54 % of total catch (WCPFC Part 1 Country Report; DRMM, 2016).

2.2.4 Management of the fishery

Within the purview of the founding text of 2004, which established the expanded autonomous status for French Polynesia (see Section 2.2.2) with Ministerial Decree N°1914/CM of 25 November 2011, the DRMM was charged with management and control of the exploitation of the marine resources within the EEZ. The Decree spelled out the goals, missions and functions of the Directorate. A fishery resources management plan has been under development for at least the last four years but hasn't been formalised, mostly due to political reasons. This management plan, when it is eventually promulgated, will be able to formalise and bring together existing policies, such as the existing prohibition on purse seining¹, a cap on the total number of longline licences, etc. At the moment a *de facto* 75 license cap for vessels targeting albacore south of 20°S latitude is in place since only 59 vessels were in fact active for 2016.

The EEZ of French Polynesia straddles the boundary between the two RFMOs in the Pacific: WCPFC and IATTC. The territory shares its data with both RFMOs but is a 'participating territory' only to WCPFC (see below). Although only ~20 % of the EEZ is to the west of the 150° meridian (the notional boundary – see Figure 2), this makes sense for political and cultural reasons, since it puts French Polynesia with the rest of Polynesia rather than with Latin America.

French Polynesia is a participating territory to the WCPFC and is classed as a Small Island Developing State (SIDS) for the purposes of WCPFC Conservation Management Measures

¹ In any case, conditions are suboptimal for such a venture (no big skipjack schools and badly positioned thermocline) and the fishing industry is certainly against it, not to mention negative public opinion.



(CMMs). French Polynesia has no voting rights since it is not a 'country' in its own right – these are retained by France. It does, however, sit at the table and can intervene during all meetings of plenary and Commission subsidiary bodies. In addition, French Polynesia recently (September 2016) became a full member of the Pacific Island Forum. French Polynesia is not a direct member of FFA but only an observer so far. With respect to WCPFC CMMs, these are not explicitly mentioned in FP legislature at this time, but as can be seen from the WCPFC13 Part 1 Country Report (DRMM, 2016), all relevant CCMs are being taken into consideration by DRMM. However, translated CMMs have yet to be transposed into French Polynesia's legislation. Although they are respected in practice according to the Part 1 report (2016), they are still only implicit.



Figure 2. Overlap area between the WCPFC and IATTC Conventions (from WCPFC-2011/41, 2011)

2.2.5 Gear and operation of the fishery

The longline fishing method involves deploying the main line from a large reel, with baited hooks on branch lines attached at regular intervals (Figure 3).





Figure 3. Illustration of set longline (Source: <u>www.sanford.co.nz/operations</u>).

In this fishery, the branch lines are usually around 30 m (5 - 6 fathoms) long and the distance between two adjacent branch lines must be greater than the length of the branch lines to avoid entanglement. Line shooters are used in conjuction with vessel speed and branch line attachment, to arrive at a predicted cantenary curve - the curve a hanging flexible wire or chain assumes when supported at its ends and acted upon by a uniform gravitational force - in the main line to get branch lines deeper into the water column. Also at regular intervals, floats and float lines are attached, with around 30 hooks between two adjacent floats. The floats suspend the main line in the water column at a predetermined depth. The main lines are 20 nM - 40 nM long (depending on vessel size), usually having less than 3,000 hooks on each. This set-up method for the longlines targets mainly larger tuna at and below the thermocline.

The hooks used are either circle or tuna hooks (Figure 4). Each vessel uses one main line per set, with a soak time of about 6 hours. Trip duration is dependent on vessel hold capacity; usually fresh fish trips total no more than 12 days, although this depends on the vessel – larger vessels over 20 m length can have trips of up to 20 days. Frozen loins trip can be up to 1.5 months.





Figure 4. Hooks used by vessels in the UoA. Top: examples of circle hooks (from <u>www.bestmadeinkorea.com</u>); Middle: examples of tuna hooks (from <u>www.thehulltruth.com</u>); Bottom: the J-hook on the left is no longer used (from Beverly, 2009).



2.2.6 Fishing areas and seasons

Overall, the fleet which is almost entirely based in Tahiti, exploits only ~45 % of the EEZ. However, the core fishing grounds remain (as historically) in the north part of the EEZ (10°-20° S /140°-150°W) (Figure 5). Most vessels are deploying gear north of 20°S latitude and across the 150°W meridian which divides the WCPFC and IATTC convention areas (lines on map). Although there is no real season when there is no fishing, there is seasonality in catch composition and catch per unit effort (CPUE). For example, there appears to be a "season" for smaller yellowfin tuna (10 kg - 20 kg) in the north/north-east sector of the EEZ each year around mid-late summer to early fall, although this is variable depending upon broader oceanographic conditions and strength/duration of any ENSO event. In 2015, 42 longline vessels targeting albacore caught 503 tonnes of albacore south of 20°S (WCPFC Part 1 National Report – DRMM, 2016).

The fishing takes place almost entirely outside 20 nm as otherwise the risk to gear damage and conflict with coastal fishermen increases. A small number of longliners do, however, fish closer inshore as this reportedly provides for a more diverse catch when albacore prices are low.



Figure 5. Longline fishing locations in the EEZ 2010-2015. Dividing lines are 20°S (limit of albacore effort limits under CMM 2015-02) and 150°W (boundary of WCPFC and IATTC). Source: DRMM.



2.3 Principle One: Target Species Background

Note on WCPFC14: During peer review, the outcome report for WCPFC14 was published (WCPFC14-2017), and the team reviewed this report to ensure that there had not been substantive changes to the management system as a result. The key change in relation to the target stocks is the replacement of CMM 2016-01 with 2017-01 (new tropical tuna CMM), which comes into force in February 2018. This CMM is an incremental improvement to the control of effort and/or landings for WCPO yellowfin (as well as bigeye), but does not impact on any of the scoring. The remainder of the report has therefore not been changed.

2.3.1 Definition of stocks – eastern vs. western Pacific

As previously stated, the EEZ of French Polynesia straddles the boundary between the WCPFC and IATTC convention areas. From the point of view of Principle 1, this situation has no impact for South Pacific albacore, which is a shared stock between WCPFC and IATTC, but it complicates the assessment of yellowfin somewhat, since Pacific yellowfin is managed as two separate stocks: a WCPO stock managed by WCPFC and a EPO stock managed by IATTC, albeit with considerable exchange of fish between the two. Thus both stocks and both management regimes have been taken into account in the assessment of yellowfin UoAs 2 and 3.

2.3.2 P1 Assessment methodology for WCPFC stocks

In April 2016 a pilot harmonisation exercise for Principle 1 across all the WCPFC stocks with certified fisheries was hosted by MSC in Hong Kong. The report of this meeting is provided in Appendix 2. The harmonisation was based on the 2015 stock assessment for albacore (Harley et al., 2015a) and the 2014 stock assessment for yellowfin (Davies et al., 2014), which are still the most recent officially-accepted assessments available. As agreed by the participants in the harmonisation exercise, the default position for scoring shall be to take the scores agreed during the harmonisation; nevertheless, the team has reviewed each P1 scoring issue for albacore and WCPO yellowfin for this assessment; the yellowfin scores have also been adjusted to take account of the EPO component.

The elements which have changed since the pilot harmonisation exercise (for both WCPFM stocks) are as follows:

- New CMM 2016-01 has replaced CMM 2015-01 (tropical tuna applies to WCPO yellowfin).
- The workplan for CMM 2014-06 (Harvest Strategy Workplan) has been revised.
- Although the stock assessment used for management advice for albacore has not changed, a stock assessment using an alternative methodology (SS3) was presented to SC12 (Cao et al., 2016) – the conclusions of this alternative assessment are also considered here.



The New Zealand albacore troll fishery² has started the process of re-assessment, while the French Polynesia albacore and yellowfin longline fishery³ is in full assessment. These fisheries are additionally taken into account in relation to harmonisation.

2.3.3 P1 Assessment methodology for IATTC yellowfin

One other fishery is certified on this stock: the Mexico northeastern tropical Pacific purse seine fishery⁴; recently certified but based on older stock assessments than this assessment because the assessment process took some time. Nevertheless, the relevant CABs (MEC and SCS) undertook a harmonisation process and were able to agree on all scores for all scoring issues. Any remaining differences between the scoring in these two sassessment do not make any different to the certification outcome and will be aligned by SCS at the next opportunity (Year 1 audit).

 This discussion around harmonisation took place after the site visit and initial scoring by MEC and resulted in the scoring being updated to take into account a more recent update stock assessment (May 2017).

2.3.4 Albacore life history and fisheries

<u>Stocks</u>: Pacific albacore is managed as two stocks: South Pacific albacore and North Pacific albacore (the SP stock is the stock of interest here). There is no genetic evidence of stock structure within the South Pacific, although there are some differences, e.g. in growth rates (faster in the eastern Pacific) suggesting that mixing rates between the eastern and western Pacific may nevertheless be quite slow. Albacore are thought to spawn in tropical and sub-tropical waters, but juveniles (~40 cm FL) are found around the sub-tropical convergence zone (~40°S; e.g. around New Zealand), from where they are thought to migrate gradually northwards. Seasonal north-south movements are also inferred from longline catch rates by latitude; these appear to coincide with the 23 °C - 28°C isotherm (Harley et al., 2015 and references therein).

<u>Age and growth</u>: In terms of growth, albacore are thought to reach ~40 cm – 50 cm FL in their first year, subsequent growth averages ~10 cm per year until maturity (size at maturity ~85 cm FL), after which growth rates slow. Male and female growth rates diverge after maturity, with males growing faster. Maximum recorded length is ~120 cm. A significant number of fish are thought to reach 10 years or more; the maximum recorded period at liberty for a tagged fish is 11 years in the South Pacific and 15 years in the North Pacific. In relation to this fishery specifically, port sampling suggests that the fish landed average ~90 cm – 108 cm FL; this has reportedly been consistent over at least the last five years.

2.3.5 Albacore stock status and trends

The most recent SPC stock assessment is presented in Harley et al. (2015). The key conclusions are summarised in Table 4, and the Majuro Plot is given in Figure 6. Catch is around the Maximum Sustainable Yield (MSY) level, but fishing mortality is below F_{MSY} (and

² <u>https://fisheries.msc.org/en/fisheries/new-zealand-albacore-tuna-troll/@@assessments</u>

³ <u>https://fisheries.msc.org/en/fisheries/french-polynesia-albacore-and-yellowfin-longline-</u>fishery/@@assessments

⁴ <u>https://fisheries.msc.org/en/fisheries/northeastern-tropical-pacific-purse-seine-yellowfin-and-</u> skipjack-tuna-fishery/@@view



hence biomass is above B_{MSY} although this is not directly estimated). Biomass is estimated to be at around 40 % of the biomass there would be in the absence of fishing. Trends in spawning potential since 1960 are given in Figure 7.

In 2016, a stock assessment was tried using SS3 (Cao et al., 2015; WCPFC-SC12-2016/ SA-IP-18); it arrived at the same conclusions as SPC, and estimated B_{MSY} to be ~29 % B₀. SC12 made no specific comments on this assessment (see SC12, 2016).

Table 4. Key stock assessment outputs (reference case model,	grid median and 5 % and 95 %
percentiles), from Tables 5 and 6 in Harley et al. (2015).	

	Ref. case	Grid median	Grid 5%ile	Grid 95%ile
Catch 2013	77,046	77,231	75,341	78,243
MSY	76,800	91,660	65,950	149,900
F ₂₀₀₉₋₁₂ / F _{MSY}	0.39	0.28	0.11	0.59
SB2013/SB0	0.41	0.48	0.33	0.63
SB2013/SBF=0	0.40	0.48	0.32	0.64



Figure 6. Majuro plot for South Pacific albacore, from Figure 36 in Harley et al. (2015). The red zone (left of the solid black line) represents spawning biomass below the agreed limit reference point; the orange region (above the dashed line) is fishing mortality higher than F_{MSY} ; the green shaded rectangle corresponds to the candidate bio-economic target reference points under discussion; the pink circle is the most recent period (i.e. 2014).





Figure 7. Trends in annual spawning potential by region as estimated by the reference case model (Figure 27 in Harley et al., 2015). The French Polynesia EEZ is almost entirely in Region 7 although overlapping neighbouring regions.

In the absence of a new stock assessment in 2016, SC12 reviewed a suite of indicators for the fishery (Pilling et al., 2016a). For 2015, catch was 16 % lower than both 2014 and the 2010-14 average. Effort (number of hooks) for 2016 may have reduced by a roughly similar amount, but SPC highlighted the uncertainty in this estimate. The paper also provided status quo projections (based on 2014 effort levels), which estimated a continued decline in stock biomass to 32 %SB_{F=0} by 2033, with an associated decline in CPUE of 14 % and a risk of falling below the agreed limit reference point of 19 % (Figure 8).

A bio-economic analysis by SPC (Pilling et al., 2016b) also looks at future stock status under current levels of fishing. Constant 2013 effort levels for 20 years result in biomass declining to $32 \text{ }\%\text{SB}_{F=0}$, while constant 2013 catch for 20 years resulted in a biomass of 23 $\text{}\%\text{SB}_{F=0}$ and a risk of falling below the limit reference point of 41 %.





Figure 8. Stochastic projections of South Pacific albacore spawner biomass under 2014 effort levels. The limit reference point (20 % SBF=0) is indicated by the horizontal dashed red line. Figure 10 in Pilling et al. (2016a).

2.3.6 Albacore reference points

There is a formally-agreed limit reference point for South Pacific albacore of 20 %SB_{F=0}, although it has not as yet been agreed how this should be used in management in quantitative terms – specifically the acceptable level of risk of breaching the limit is not specified. Under the workplan for CMM 2014-06, this was due to be done at WCPFC13. During the meeting, FFA proposed a maximum acceptable risk of 5 % for SP albacore and 10 % for yellowfin (FFA, 2016a). The USA proposed 20 % for all four main stocks, on the basis that the limit reference point could be considered quite precautionary (USA, 2016a; WCPFC13 report – see paragraph 288 onwards). Ultimately, acceptable levels of risk were not specified by WCPFC13 but it was agreed that any level >20 % was not acceptable (WCPFC13 report (2016), paragraph 296). This will be used to guide the evaluation of different options as WCPFC

Under the 2014-06 workplan, a target reference point should have been formally agreed for South Pacific albacore at WCPFC12 in December 2015. This did not however occur, nor did it happen at WCPFC13 in December 2016 (WCPFC, 2015; 2016). There remains, therefore, no formal management target. FFA proposed a target of 45 %SB_{F=0} at WCPFC13 (FFA, 2016b); this was blocked by China (and perhaps others), although FFA stated that in constructing the in-zone management framework under the Tokelau Arrangement (see below), this would nevertheless be considered the interim management target. The revised workplan (WCPFC Circular 2016-73; Attachment 1) agreed at WCPFC13 for 2014-06 has deferred a decision on a target reference point for SP albacore until December 2017 'at the latest' (WCPFC13, 2016). It is important to note that FFA's proposed target of 45 %SB_{F=0} would have significant implications for the fishery; according to SPC projections, recovering


the stock to this level over 20 years would involve a cut in effort of 47 % - 57 % from 2013 levels, depending on how it was timed (Pilling et al., 2016b).

2.3.7 Albacore information and stock assessment

The albacore stock assessment (Harley et al., 2015) uses three kinds of information: fisherydependent data on catch, effort and size (specific to each fishery), tag release-recapture data and size-at-age data. Longline CPUE is the most critical dataset for stock assessment purposes. Operational longline data are analysed statistically to identify target species; albacore target data are selected for each region and standardised, with missing data interpolated where possible. The French Polynesia longline fishery provides operational data on catch (landings plus discards) and effort, which is extensively quality-checked and considered to be of a high standard.

SPC conducts stock assessments for WCPFC stocks, and maintains a database of catch, effort, size, observer and VMS data (as available) for all the fleets fishing in the WCPFC Convention area. The most recent stock assessment for South Pacific albacore is presented in Harley et al. (2015). The assessment uses MULTIFAN-CL, which requires the identification of individual 'fisheries' with similar operational characteristics (selectivity, catchability). The model estimates parameter values using Bayesian ('maximum likelihood') techniques.

The albacore stock assessment is based on eight regions (mainly derived from management considerations e.g. at boundary between WCPFC and IATTC areas) with individual 'fisheries' defined by gear and region (eight longline fisheries, three troll fisheries and three driftnet fisheries). Data are available from 1960-2013, and the model runs in quarterly time steps.

Major changes from the previous assessment (2012) (described in detail in Gascoigne et al., 2015) were as follows:

- Spatial area covered changed from entire Pacific Ocean to WCPFC Convention area (south of the equator) – in order to align assessment conclusions better with the requirement to give management advice to WCPFC;
- Spatial structure changed from one single region with six defined fisheries to eight regions with individually defined fisheries;
- Fisheries definitions gear-specific;
- Time step changed from annual to quarterly;
- Age-length data added;
- Most recent tagging data added;
- Natural mortality assumed to be 0.3 yr⁻¹ rather than 0.4 yr⁻¹, to align with practice in other assessments (0.4 yr⁻¹ included in sensitivity analyses).

Harley et al. (2015) note the key uncertainties in the assessment to be:

- lack of operational data from Japan (the key fleet for the early part of the time series)
- regional weighting of CPUE



- weighting applied to the length-frequency data, which conflicted with the CPUE data
- uncertainty in growth patterns.

Overall, despite some improvements (and some continuing problems) neither the structure nor the conclusions of the assessment (given above) differ much from the previous assessment.

2.3.8 WCPFC harvest strategy

Various stakeholders, including the Scientific Committee of WCPFC have been encouraging the Commission to move towards a formal harvest strategy for several years now. The first steps taken by the Commission were a series of four annual Management Objectives Workshops held just prior to the plenary session, from 2012-2015. MOW1 focussed on capacity building in the use of management objectives, reference points and harvest control rules, with some discussion on possible management objectives for the WCPFC main fisheries. MOW2 considered a 'strawman' (candidate list of objectives, indicators and targets for each fishery). MOW3 discussed in detail the harvest strategy framework that resulted in CMM 2014-06. MOW4 (renamed the Harvest Strategy Workshop) reviewed various MSE studies from other tuna RFMOs and considered acceptable levels of risk (of breaching limit reference points), as well as targets and harvest control rules, focusing on skipjack and South Pacific albacore (SC12 report, 2016; p.86)

Along with CMM 2014-06, the Commission agreed upon a workplan to implement the CMM (to agree to a harvest strategy for each stock). The workplan does not complete the process, but takes each stock to an agreed target, indicators and acceptable level of risk, and provides for an analysis of options for harvest control rules. The key objectives for WCPFC13 for South Pacific albacore and yellowfin, according to the workplan, were to record management objectives and agree acceptable levels of risk for both stocks, and to agree a target reference point for albacore. In the end, none of these things were achieved, except to note that an acceptable level of risk could not be >20 %. A revised workplan was agreed which pushes the key decisions forward to next year (Table 5).



Table 5. Decisions due to be made by WCPFC13 according to the 2014-06 workplan, outcome of WCPFC13 and new workplan (provisional)

Due to be achieved by end 2016 (WCPFC13) (CMM 2014- 06 workplan)	Outcome at WCPFC13	New deadline (provisional revised workplan)
Albacore		
Record management objectives	No agreement	Folded into process of evaluation of candidate HCRs
Agree acceptable levels of risk for breaching LRP	No agreement, except that it should not be >20%	Folded into process of evaluation of candidate HCRs
Agree TRP	No agreement	2017 'at the latest' (WCPFC14)
Agree monitoring strategy	No agreement	Folded into process of evaluation of candidate HCRs
Agree performance indicators to evaluate HCRs	No agreement	Folded into process of evaluation of candidate HCRs
Yellowfin		
Agree acceptable levels of risk for breaching LRP	No agreement, except that it should not be >20%	Folded into process of evaluation of candidate HCRs
Record management objectives	Accepted an initial list for the tropical purse-seine fishery as a basis for evaluation of HCRs	2017 (WCPFC14)

2.3.9 Albacore harvest strategy

In the absence of progress on the harvest strategy (CMM 2014-06) at WCPFC13, the South Pacific albacore harvest strategy remains CMM 2015-02. CMM 2015-02 states that 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'. Unlike CMMs 2015-01 and 2016-01 for yellowfin this does not provide a very clear management objective, nor is it very easy to measure 'vessels actively fishing for South Pacific albacore'. In the last 4 or 5 years, however, albacore catch has stabilised, although it has not reduced to 2005 levels (this may be a function of management, but is more likely a function of decreasing catch rates, which is causing many fleets to reduce or cease activity). At present, the stock status is fine, biologically speaking. However, it is clear from SPC projections that this situation will not continue indefinitely; current (2014) levels of fishing effort give a 19 % probability of B<B_{lim} by 2033 (SC12 report, 2016 and see Figure 8 above).

In addition to the WCPFC harvest strategy process, the main albacore coastal states have grouped together under the auspices of FFA to develop the 'Tokelau Arrangement'. The objective of the Tokelau Arrangement is to develop and implement a South Pacific Albacore Harvest Strategy. The Tokelau Arrangement is a non-binding agreement under which signatories accept catch limits to albacore in their EEZ. Currently, the limits add up to more than would be required to 'recover' the stock (in relation to the reference point of 45 %SB_{F=0}), but the idea is to reduce the limits over time.

FFA are apparently working on a catch management system, to be associated in some way with the Tokelau Arrangement – reportedly based around a longline vessel day scheme. The



arrangement sets out catch limits for the EEZ of each signatory country or territory, based on the following rules:

- All participants get a baseline limit of 2,500 t;
- Participants who exceeded 2,500 t in 2001-12 can use their highest catch during that period;
- Participants may propose a lower limit than their entitlement under the above.

Details of membership and implementation of the Tokelau Arrangement are given in Section 2.5.2.

2.3.10 Yellowfin stocks

WCPFC and IATTC conduct separate stock assessments for two stocks of yellowfin in the central Pacific: WCPO yellowfin and EPO yellowfin. The EEZ of French Polynesia straddles the official 'stock boundary' (150°W – the dividing line between WCPFC and IATTC jurisdictions). As can be seen from Figure 5 above, the majority of the catch comes from the eastern side of the line (DRMM estimate ~80 %) but clearly in practice the fish in question will be from a mix of both stocks, varying over time, in all areas in which the fishery operates. On this basis, the stock status, management, information and stock assessment from both stocks has been evaluated under Principle 1 as separate UoCs.

Evidence is emerging that yellowfin stocks in this area may actually be smaller and more discrete than simply western vs. eastern Pacific, based on genetic information (Grewe et al., 2015). Both stock assessments note regional differences in growth and catch rates as well as tagging data which may also be indicators of different stocks within each region. There is not, however, sufficient information at the moment to guide changes in the geographical boundaries of stock assessments.

2.3.11 Yellowfin life history and fisheries

Yellowfin are fast-growing fish, reaching ~25 cm FL in their first three months. They start to spawn around 100 cm FL, it is thought opportunistically, in waters warmer than 26°C. The maximum size is around 180 cm. Natural mortality is known to be variable with size, and probably at its minimum somewhere around 50 cm – 100 cm. Significant numbers of fish are known to reach at least four years, and the longest period at liberty for a fish tagged at age one in the WCPO is currently six years (Davies et al., 2014). Purse seine fisheries take the majority of the catch in both areas.

2.3.12 WCPO yellowfin stock status and trends

The most recent stock assessment for WCPO yellowfin (Davies et al., 2014) estimates stock status in 2008-11 ('current') or in 2012 ('latest'). Taking the 'grid' of plausible model runs to provide a reasonable estimate of uncertainty, the conclusion is that 2012 catch was around the MSY level, 'current' fishing mortality is estimated to be below F_{MSY} with <95 % probability, spawning biomass is estimated to be at ~40 % (range 29-55%) of the unfished level, and above SB_{MSY} with ~95 % probability (Table 6).



Table 6. Key stock assessment outputs (reference case model, grid median and 5% and 95% percentiles), from Davies et al., 2014.

	Ref. case	Grid median	Grid 5 %ile	Grid 95 %ile
Clatest/MSY	1.02	1.04	0.80	1.24
F _{current} /F _{MSY}	0.72	0.76	0.51	1.09
SB _{current} /SB _{F=0}	0.42	0.41	0.29	0.55
SBlatest/SBF=0	0.38	0.38	0.29	0.52
SB _{current} /SB _{MSY}	1.37	1.37	0.97	1.82
SB _{latest} /SB _{MSY}	1.24	1.29	1.00	1.69

For SC12 (2016), SPC produced an information paper on fisheries indicators for stocks not assessed in 2016, including WCPO yellowfin (Pilling et al., 2016c). Their short-term stochastic projections (assuming recruitment continuing as in recent years) suggest that the spawning biomass is likely to increase at current rates of fishing (SB₂₀₁₆/SB_{F=0} ~0.49; F_{2016}/F_{MSY} ~0.8) (Figure 9).





2.3.13 WCPO yellowfin reference points

WCPFC has agreed an explicit limit reference point for yellowfin (and other stocks) of 20 $\%SB_{current,F=0}$, where 'current' is defined as the most recent 10-year period for which data are available for the stock assessment. As for albacore, the acceptable level of risk of breaching the limit reference point should have been defined at WCPFC13 (2016), according to the workplan for CMM 2014-06 (which would allow the reference point to be used as part of a



quantitative harvest control rule) but this was not done, except to agree that it should not be higher than 20 % (for details see Section 2.3.6).

Under CMMs 2015-01 and 2016-01, the stated management objective for yellowfin is to maintain F below F_{MSY} ; hence F_{MSY} , and by extension SB_{MSY}, are implicit target reference points for yellowfin. Under the 2014-06 workplan, a formal target reference point is due to be agreed by WCPFC14 (2017).

2.3.14 WCPO yellowfin information and stock assessment

As for albacore, the stock assessment is conducted by SPC using MULTIFAN-CL. The most recent stock assessment (Davies et al., 2014) relies on the following key datasets:

- Catch and CPUE particularly longline CPUE (catch per hook set) but also purse seine CPUE (catch per day fishing/searching, by set type); the 2014 assessment was able to incorporate some operational-level longline data from Japan, Korea and Taiwan.
- Length-frequency data from port sampling programmes.
- Tagging data covering the period 1989-2011; most recently the Pacific Tuna Tagging Programme which covers 13,500 recaptures.

Overall, SPC considers the model output to be relatively robust ('*This result indicates there to be sufficient and coherent information in the observations from which absolute abundance can be inferred* – Davies et al., 2014, Section 7.2). However, they do note various sources of uncertainty in the reference case model, as given below. A series of one-off sensitivity analyses were performed to evaluate the significance of these uncertainties, and their impact on model outcome is indicated where given.

- Recruitment in the terminal time period (2012) low sensitivity;
- Conflict between CPUE and tagging data for region 8 [PNG and the Solomon Islands] low;
- Confounding of regional recruitment with movement between regions in some areas low;
- Recruitment estimates for the first 14 years of the model are highly uncertain and had to be removed from parameter-fitting;
- Steepness of the stock-recruit relationship moderate sensitivity but no qualitative difference in outcome;
- Natural mortality at age moderate sensitivity but no qualitative difference in outcome.

2.3.15 WCPO yellowfin harvest strategy

Information on the general WCPFC harvest strategy for all stocks is provided in the albacore section above (Section 2.3.8).

WCPFC13 replaced CMM 2015-01 for tropical tuna with CMM 2016-01. This is a one-year interim measure; it is hoped to develop a multi-annual tropical tuna management measure during the course of 2017, for approval and implementation by WCPFC14. CMM 2016-01 is



no different to 2015-01 for yellowfin; it sets F_{MSY} as the management objective, and implements management controls by way of the following:

- FAD time closure, FAD limits and a ban on FAD sets in the high seas (with some exceptions)
- purse seine effort limits in EEZs and on the high seas (as well as the PNA vessel day scheme – see below)
- no discarding of yellowfin (or the other tropical species)
- CCMs to take measures 'not to increase catches by their longline vessels of yellowfin tuna'.

The CMM foresaw WCPFC setting catch limits for yellowfin at WCPFC13 (2016) – but this did not happen; presumably it will be a key part of the multi-annual measure which will be the focus of work in 2017.

There is also some management of yellowfin under the PNA vessel day scheme, which limits purse seine effort in the EEZs of the Parties to the Nauru Agreement (PNA) which among them cover >50 % of WCPO purse seine effort.

2.3.16 EPO yellowfin recruitment

The most recent stock assessment for EPO yellowfin was conducted by IATTC in 2016 and assesses stock status in 2015 (Minte-Vera et al., 2016).); the base case model was updated to 2016 in an update assessment in 2017 (Minte-Vera et al., 2017). The last full assessment as well as previous assessments suggest that there have been several regime shifts for recruitment of EPO yellowfin (Figure 10), with periods of higher recruitment also having higher biomass. This is significant for the stock assessment in as much as the outcome of the assessment is highly sensitive to assumptions about the existence and nature of the stock-recruit relationship. An analysis of these data on the face of it provide 'weak' evidence for a stock-recruit relationship, but IATTC scientists take the view that this is likely to be an artefact of the regime shifts driven by external factors; e.g. there have been a series of strong La Niña events since 2007 (see Minte-Vera et al., 2016; p.5-6).

The base case assessment assumes no stock-recruit relationship, but it is part of the sensitivity analyses (as well as the reference points – see below). When a SR relationship is incorporated into the model, it uses a value of steepness of h = 0.75, which on the face of it seems unlikely given the 'weak' relationship and evidence of environmental drivers of recruitment described above. Unlike other RFMOs, IATTC's approach has not been to assume some limited SR relationship in the base case model (usually h = 0.8 or h = 0.9 and usually on a precautionary basis rather than based on data; the WCPO yellowfin assessment described above uses h = 0.8 in the base case model but with a weak penalty for deviation from this value; acknowledging that it is based on very limited information). Reportedly, the value of 0.75 used in the sensitivity analyses and in the reference points is intended to be a precautionary value set at the limit of what is biologically plausible for yellowfin, rather than a realistic alternative scenario (Carlos Alvarez, pers. comm.).





Figure 10. Annual recruitment for EPO yellowfin as estimated by the stock assessment (Minte-Vera et al., 2017), showing the three recruitment regimes (low at the start of the time series, high 1983-2002 and medium thereafter, except for the large increase estimated for the last two years, albeit with wide confidence intervals).

2.3.17 EPO yellowfin reference points

Interim target and limit reference points for IATTC tropical tunas were adopted at the 87th meeting and are set out in Resolution C-16-02 (harvest control rules) as follows:

- Limit reference points F_{lim} and SB_{lim}: F_{0.5R0} and SB_{0.5R0}, assuming h = 0.75 (i.e. the fishing mortality and biomass producing 50 % of virgin recruitment, based on the assumption of a stock-recruit relationship with steepness 0.75)
- Target reference points: F_{MSY} and SB_{MSY}

For EPO yellowfin, Minte-Vera et al. (2016) estimate the limit reference points at $2.42F_{MSY}$ and $0.28SB_{MSY}$ or 10 %SB₀ (since SB_{MSY}/SB₀=0.35 for the stock-recruit scenario, they are not reestimated in the 2017 update). MSC, however, sets a minimum default value for defining the 'point of recruitment impairment' (PRI, usually taken as equivalent to the limit reference point) of 20 %(S)B₀ (Guidance p.377), which would be in this case $0.56SB_{MSY}$ or $2*SB_{lim}$. Since SB_{0.5R0} is, logically, below the PRI, we have used this MSC default value as a proxy for the PRI.

2.3.18 EPO yellowfin stock status and trends

The assessment estimates that spawner biomass was below the MSY level in the period 1977-83 (low recruitment regime), but above the MSY level for most of the high productivity period, as well as in 2008-10 (following ~average recruitment in 2006), but since then at or slightly below the MSY level. The assessment attributes the recent lower biomass to a series of belowaverage recruitments since 2007, likely due to strong La Niña conditions. The authors note that the different regimes may in reality have different values for MSY reference points.



The base case model as updated in 2017 estimates 2016 catch at 93 % of MSY, SB₂₀₁₆ at 86 % of SB_{MSY} (reduced from 95 % in 2015), B₂₀₁₆ (fish 3+ quarters old in the first quarter of 2017) at 130 % of B_{MSY} and F at or just below F_{MSY} ('Fmult' = 1.03; note that Fmult (not used by WCPFC) is F_{MSY}/F rather than the other way round as for the other indices). In other words, spawner biomass is currently estimated to be below the MSY level but estimates of F, B and recruitment suggest that it will increase above the MSY level in 2018 with high confidence (see Minte-Vera et al., 2017, Figure 2). Selected outputs of the base case and sensitivity runs are given in Table 7. The differences in the various models are described in Section 2.3.20 below. Trends in spawner biomass from the base case model are given in Figure 11. The regime shifts (so described by IATTC scientists) are clearly visible. Since 2011, the spawner biomass has been fluctuating more or less at the MSY level. The Kobe plot for the base case model is presented in Figure 12, with target and limit reference points.

Table 7. Key stock assessment outputs (base case model and sensitivity runs), from Minte-Vera et al. 2016 and 2017). The 2017 update assessment only considered the base case model and h=0.75, so these values are estimates for 2016, the other sensitivities come from the 2016 full assessment and are estimates for 2015. Likewise, the 2017 update does not estimate LRP values, so these also come from the 2016 full assessment. Note that the limit reference points assume h = 0.75 so it may not be appropriate to estimate them for the other model scenarios, but since this is done in the 2016 stock assessment for the base case (see Figure 6 in Minte-Vera et al., 2016) it is also done here, but only for those two scenarios.

	Base case	h=0.75	Mean size of oldest age class		Dolphin fishery	Weighting frequency	of length- data
			170	190	main abundance index	Francis method	Harmonic mean method
C ₂₀₁₅ /MSY	0.93	0.88	0.89	0.94	1.00	0.88	0.94
Fmult (2013- 15 average)	1.03	0.66	1.48	0.88	1.21	0.88	0.88
F ₂₀₁₃₋₁₅ /F _{MSY} (1/Fmult)	0.97	1.51	0.68	1.14	0.83	1.14	1.14
F ₂₀₁₃₋₁₅ /F _{lim}	0.40	0.64					
SB2016/SBMSY	0.86	0.51	1.30	0.74	1.02	0.88	0.74
B ₂₀₁₆ /B _{MSY}	1.30	0.87	1.18	0.82	0.88	0.98	0.82
SB ₂₀₁₅ /SB _{lim}	3.39	1.60					
SB ₂₀₁₅ /2*SB _{lim}	1.70	0.80					





Figure 11. Trends in spawner biomass over time, according to the base case model, plus future projects with confidence intervals (Minte-Vera et al., 2017; Figure 2 top).



Figure 12. Kobe plot for EPO yellowfin showing population trajectory in relation to MSY (target) reference points (solid lines) and limit reference points (dashed lines) (biomass on the x-axis and fishing mortality on the y-axis) for the base case model; top: spawner biomass; bottom: biomass aged 3+ quarters. Figure 5 in Minte-Vera et al. (2017).



2.3.19 EPO yellowfin information

French Polynesia provides catch, effort and length-frequency data (from port sampling) to IATTC as well as WCPFC although they are not a Member or Cooperating non-Member (CPC) of IATTC.

The stock assessment uses the following data:

- Catch data up to the end of 2015; for fisheries without data for the most recent years, catches were assumed to be the same as in previous years: the 2016 assessment notes new or updated data from China, Japan, Korea, Taiwan, USA, French Polynesia, Vanuatu and others.
- CPUE data as above; the new stock assessment included a new detailed time series of CPUE from the Japanese longline fishery from 1975, based on operational data, which is a key dataset for the assessment. Purse seine CPUE is expressed in catch (weight) per day; longline CPUE in catch (number) per hook and standardised by latitude, longitude and hooks per basket. (Only some fisheries are used to provide CPUE abundance indices for the assessment – see below.)
- Size composition data from several fisheries, including a detailed new dataset from Japan, from 1986.
- Age-at-length data from otolith sampling (Wild, 1986, cited in Aires-da-Silva and Maunder, 2012).

The data are stratified according to the 'fisheries' used in the stock assessment (see below). Care is taken to define the use of retained catch vs. total catch vs. landings to the cannery. Purse seine catch species composition is estimated, and considerable work has gone into evaluating the relative species composition of catches vs. landings, and the potential biases associated with various sampling methodologies (see discussion in Aires-da-Silva and Maunder, 2012). Purse seine discards are estimated by IATTC or national observers using a set methodology, and the assessment assumes that all discards die.

2.3.20 EPO yellowfin stock assessment

The most recent stock assessment was in 2016 (Minte-Vera et al., 2016) but the model structure and data inputs used in the assessment have not changed for several years and are described in Aires-da-Silva and Maunder (2012).

<u>Data inputs to model</u>: The stock assessment model defines 16 'fisheries' (used to fit the model) and four 'surveys' (not surveys but in SS parlance a way to use data for comparative purposes without using it to fit the model). The fisheries / surveys are defined by gear type, set type (for purse seine) and IATTC sampling area, as follows (all time series from 1975-2015 except the last four fisheries) (Minte-Vera et al., 2016):

• Fisheries 1, 2 and 4 (Figure 13): Purse seine fisheries on floating objects (mainly FADs) in different areas; the components of retained catch and discards from inefficiencies in the fishing process – i.e. non-size-specific discards



- Fishery 3 (Figure 13): Purse seine fishery on floating objects (mixture of flotsam and FADs); the components of retained catch and discards from inefficiencies in the fishing process i.e. non-size-specific discards
- Fisheries 5 and 6 (Figure 13): Purse seine fisheries unassociated sets; retained catch and all discards
- Fisheries 7, 8 and 9: Purse seine fisheries dolphin-associated; retained catch and all discards
- Fishery 10: Pole-and-line fishery (retained catch)
- Fisheries 11 and 12: Longline fisheries north and south of 15°N (retained catch)
- Fisheries 13, 14, 15 and 16: Purse seine 'fisheries' corresponding to the discards of smallsized fish in Fisheries 1, 2, 3 and 4 (from 1993)
- 'Surveys' S1 and S2: Japanese longline weight composition data, north and south of 15°N
- 'Surveys' S3 and S4: Japanese longline training vessels length composition data, as above

The logic for the definition of these fisheries is that there should be little change in size composition of the catch over time – hence why fisheries 13 - 16 are treated as separate fisheries from 1 - 4.



Figure 13. Fisheries as defined for the yellowfin stock assessment model, according to IATTC sampling areas: purse seine (top, set types as indicated), pole-and-line (bottom left) and longline (bottom right), fishery numbers given on the maps. Surveys are not divided by area. Figure 2.1 in Aires-da-Silva and Maunder (2012).



<u>Modelling life history</u>: The stock assessment models growth using a Richards growth curve with growth parameters taken from an earlier assessment (Maunders and Aires-da-Silva, 2009), and a weight-length relationship derived from Wild, 1986. (Aires-da-Silva and Maunder (2012) note that additional unpublished data give a slightly different formula but essentially identical stock assessment outputs). Natural mortality is assumed to vary with age, and is estimated separately for males and females. Estimates are fitted to sex ratio-at-length data, and are also compared with estimates used in the western Pacific – full details of the methodology are set out in Maunder and Watters, 2001. A curve is applied to estimate fecundity-at-age. A stock-recruit relationship is not assumed by the model, but is applied (Beverton and Holt) as part of the sensitivity analyses (as described above).

<u>Modelling environmental parameters</u>: The EPO is strongly influenced by ENSO, and Aires-da-Silva and Maunder (2012) note that stock assessments in the past evaluated temperature and various indices of oceanographic conditions; however, no relation with these variables was found, other than for the southern longline fishery – which is taken care of in this model by standardisation of longline CPUE by lat. and long.

<u>Software</u>: The stock assessment uses Stock Synthesis version 3.23b. It is a statistical agestructured model, and uses quarterly time steps. It is fitted to the data (CPUE indices and size compositions) by finding the set of population dynamics and fishing parameters that give the 'maximum likelihood' fit, given the observed catches.

<u>Assumptions</u>: As well as the model assumptions arising from the data inputs (described above), Aires-da-Silva and Maunder (2012) give the following list of key model assumptions:

- Yellowfin recruit to the discard fisheries (13 16) one quarter after hatching, and only these fisheries apply to the first few age classes.
- For the southern unassociated, dolphin and longline fisheries, which take large fish (Fisheries 6, 9 and 12) selectivity is asymptotic – i.e. increasing at decreasing rate with age.
- CPUE abundance indices are fitted from Fisheries 5 8 and 12, because these fisheries provide the most information about abundance. The others were not used as abundance indices because either they were too variable or because yellowfin was not the main target species.
- Size composition data from Fishery 9 was not used because it was too variable.
- Recruitment can occur in every quarter.

The following parameters are fixed (assumed) but tested in sensitivity analyses where relevant: mean length-at-age and coefficient of variation of length by age; natural mortality (by age and sex); fecundity at age; selectivity of the discard fisheries; steepness of the stock-recruit relationship.

Diagnostics: IATTC scientists use three approaches to evaluate model specification and fit:

• Comparison of model output to observed data: residual analysis and root-mean-square error for the CPUE abundance indices;



- Model likelihood profile on the global scaling parameter (virgin recruitment R₀): if different data components suggest different values of R₀, this implies a problem with the model specification;
- Age-structured population model: This is done by fixing all the model parameters except the scaling parameters to the values of the maximum likelihood estimate from the base case model, setting recruitment deviates to zero and fitting this more deterministic model to the indices of abundance. The model trajectory is compared to the base case statistical model. If the simplified population model is not able to fit the indices or if it has large confidence intervals, this indicates that they are not explained by the catch. This could have various causes: i) stock dynamics driven by recruitment, ii) stock biomass remains high enough that catch is not a major factor in abundance; iii) the base case model is not correctly specified; or iv) the CPUE indices are not proportional to absolute abundance.

<u>Sensitivity analyses</u>: Four sensitivity analyses were run for the 2016 assessment: they are described along with the base case model below. The outputs of the base case model and the various sensitivity runs are given in Table 7 above:

- Base case model: No stock-recruit relationship (h = 1), growth parameters from Maunder and Aires-da-Silva (2009) including L₂ = 182.3 cm, fitted to CPUE time series for Fisheries 5-8 and 12, asymptotic selectivity for Fisheries 9 and 12, dome-shaped selectivity for the other fisheries;
- Sensitivity to the stock-recruit relationship: As base case model, but h =0.75
- Sensitivity to the size of the largest fish: As base case but L2 = 170 or 190 cm
- Sentivity to fitting CPUE index for Fishery 7: As base case but CV of Fishery 7 set to 0.2 instead of estimated
- Sensitivity to weighting of length-composition data: Weighting is a function of variance, which is a function of sample size two different methods to estimate purse seine sample size were used (see Table 7).

<u>Diagnostic outputs and uncertainties</u>: The output of diagnostics for the base case model are available here: <u>http://www.iattc.org/meetings/meetings2016/sac7/yftbase1/SS_output.html</u>. The base case model fits the southern longline fishery and dolphin-associated indices fairly well, but the unassociated purse-seine indices less well. In recent years, the model overestimates longline CPUE and underestimates purse seine CPUE. Different data components have conflicting outputs in terms of the maximum likelihood profile on R_0 ; the authors conclude that this most likely means either i) a mis-specification in the model or ii) the precision of the data are overestimated (or both). What this means in terms of model uncertainties is set out below.

The age-structured population model output was a flat biomass trajectory, meaning that there is not a clear deterministic production function. The assessment concludes that this is for two main reasons: i) the stock abundance is strongly driven by recruitment (indicated by the fact that trends in model indices matched well when recruitment estimates from the base case model were added to the deterministic population model) and ii) there is insufficient contrast in the data (since the datasets start in 1975, after the start of the fishery). They note that it is



likely that the catch is influencing the biomass (as per Table 7), but the age-structured model cannot fit the peaks and troughs in biomass driven by fluctuations in recruitment.

The following uncertainties are highlighted in the stock assessment report:

- The assumption of a single panmictic stock in the EPO is probably incorrect.
- Growth of yellowfin is not adequately modelled by the Richards growth function.
- Purse seine length composition is likely variable in time and sample sizes need to be higher to improve data precision.
- The model outputs are sensitive to estimates of natural mortality, the stock-recruit relationships (although recruitment estimates are similar, estimates of B_{MSY} are higher and therefore the conclusions on stock status are more pessimistic), the mean size of the oldest age class and the weighting of different datasets.

2.3.21 IATTC yellowfin harvest strategy

IATTC have agreed a harvest control rule for tropical tunas in Resolution C-16-02, based on the reference points set out above. The HCR is as follows:

- Multi-year management measures (closures are given as an example) will attempt to keep F below F_{MSY} for the species requiring the strictest management (i.e. the most vulnerable of the three tropical tuna species in terms of stock status);
- If the probability that F>F_{lim} is >10 %, management measures shall be established such that there is at least a 50 % probability that F will reduce to F_{MSY} or below, and with a probability of <10 % of F>F_{lim}.
- If the probability that SB<SB_{lim} is >10 %, management measures shall be established such that there is at least a 50 % probability that SB will recover to SB_{MSY} or above, and with a probability of <10 % that SB will decline to <SB_{lim} within two generations or 5 years, whichever is greater.

Resolution C-16-02 does not specify the tools that should be used to implement the HCR, but IATTC met in February 2017 for an extraordinary meeting, and passed Resolution C-17-01, which sets out a series of management measures for bigeye and yellowfin as set out below, applying to purse seine vessels with >182 t carrying capacity, and to longline vessels >24 m LOA.

- 62 days closure for purse seine vessels in 2017, to be applied either 29th July 28th September, or 18th November 18th January (2018), although purse seiners of capacity <272 t may make one 30-day trip during this period as long as they have an observer on board, vessels must commit to a given closure period by 15th July; some exemptions for *force majeure* are permitted on application.
- Catch limit of 97,711 t for purse seine sets on floating objectives.
- Catch limit of 162,182 t for the largest purse seiners (Class 6) on dolphins.
- One month closure in the area shown in Figure 14 September 29-October 29.



• Bigeye longline catch limits, no discarding of bigeye, yellowfin or skipjack unless unfit for human consumption.



Figure 1. Closure area

Figure 14. Closed area from 29th September – 29th October under C-17-01 (Figure 1 in Resolution text).

There is not a direct link between these measures and the HCR, as there would be, for example, if target reference points were used to establish a TAC, as is done elsewhere. However, the number of days of closure have in the past been adjusted according to Fmult for the most vulnerable species (i.e. the species for which Fmult is lowest), In practice, however, the closure has been set at 62 days for several years, based on scientific advice. In 2011, IATTC scientists recommended it be increased to 74 days based on a low Fmult for bigeye, but this was not done. Subsequently, however, Fmult for both bigeye and yellowfin has been close to one, and the 62 days have been maintained. Hence there is a link between the tools used for management and the stock level relative to reference points, albeit indirect (see history given in Morgan et al., 2017, pp.47-8).

Furthermore, C-17-01 requires IATTC scientists to evaluate the impact of these measures on the stocks, and if necessary to recommend additions or changes – this is due to take place during 2018. Projections based on average levels of fishing mortality prior to this resolution, however, suggest (albeit with some uncertainty) that yellowfin has a ~50 % probability of reaching the MSY level or above by 2018 in any case. It is thus logical to assume that this is likely to be successful in improving yellowfin stock status.

2.3.22 French Polynesia harvest strategy

The French Polynesia EEZ is lightly exploited (see Figure 5 above): only French Polynesian vessels are permitted to fish there (no licensing of foreign vessels). Purse seining is not permitted in the EEZ. For the domestic offshore longline fishery (this fishery) there is currently no cap on licences; however no cap has had to be applied in practice since the number of active vessels in 2016 (59) is lower than the historic maximum (75). It is important to note that



although French Polynesia is a CCM for WCPFC rather than a CPC (Co-operating nonmember of the Commission) to the IATTC (for reasons explained above), it provides data to both RFMOs. It only applies CMMs from WCPFC, however.

2.3.23 French Polynesia in the regional harvest strategy

As noted above, French Polynesia provides data to both RFMOs but is a participating territory only to WCPFC, and only implements the WCPFC CMMs. Hence the IATTC harvest strategy for EPO yellowfin is not part of the management of the yellowfin fishery in French Polynesia. In the context of Principle 1 for EPO yellowfin harvest strategy, therefore, this begs the question as to what extent the IATTC harvest strategy for EPO yellowfin is relevant to this fishery, and (more importantly) to what extent it is undermined by the fact that French Polynesia, although taking catches from the IATTC area, is not applying the IATTC management strategy.

In practice, of course, the IATTC harvest strategy for yellowfin is only applied to the purse seine fishery, who take the vast majority of the catch (IATTC, 2016; see Figure D-4), and since purse seining is not allowed at all in the French Polynesia EEZ, even if IATTC rules were applied, no changes would be required to the management of the fishery. On this basis, it can be considered that in practice, both sets of regional harvest strategies are applied in French Polynesia.

2.3.24 Key Low-Trophic Level Species

Neither albacore nor yellowfin are low trophic level species.



2.4 Principle Two: Ecosystem Background

2.4.1 Data availability

The Principle 2 analysis is based on two key sources of information: vessel SPC logbook data and observer reports. The SPC logbooks are available from 1993 onwards and reached 100 % coverage in 2012. For each licensed vessel, the logbooks detail estimated volume (tonnes) and number of individuals of retained catch per species, as well as time and coordinates of the sets. In addition to retained catches, information on discards and interactions with Endangered, Threatened or Protected (ETP) species (or espèces 'emblématiques') is also recorded although less consistently. All logbooks are paperbased but electronic reporting is being tested at the moment through cooperation with the SPC. All logbook data should be provided to the DRMM within 15 days from the end of the trip, who cross-check it using the TUFMAN database but this does not involve verification of VMS data yet; the latter are uniquely used for real-time surveillance so far. The data are then finally sent to SPC for use in stock assessments and associated analyses.

Observer coverage in this fishery has been below 5 % since 2011 dropping to 3.4% in 2016 (Figure 15) although there is an aim to increase this. The observer programme was managed by SPC until March 2016, but this now comes under the remit of Creocean, a French consultancy.

<u>Year</u>	<u>No</u> observers	<u>No trips</u>	<u>No days</u> <u>at sea</u>	<u>No</u> sets	<u>No hooks</u>	<u>%</u> covergage
2005	3	18	422	255	635,114	2.9 %
2006	6	20	487	312	723,149	5.9 %
2007	2	17	217	138	305,977	1.8%
2008	4	17	300	206	510,115	2.5 %
2009	6	51	800	488	1,130,574	6.5%
2010	5	44	768	453	894,426	6.5%
2011	6	33	531	355	1,13,880	6.2 %
2012	6	34	521	282	825,810	4.1 %
2013	6	38	697	346	886,303	4.4%
2014	6	42	717	432	850,452	4.5 %
2015	6	40	556	321	607,455	3.6%
2016	4	25	477	323	555,952	3.4%

Figure 15. French polynesia's Observer Program data from 2005 to 2016. Source: WCPFC 13.



2.4.2 Designation of species under Principle 2

The designation of species as Primary, Secondary or Endangered, Threatened or Protected (ETP) species is based on the following criteria.

Primary species (MSC Component 2.1):

- Species in the catch that are not covered under P1
- Species that are within scope of the MSC program, i.e. no amphibians, reptiles, birds or mammals
- Species where management tools and measures are in place, intended to achieve stock management objectives reflected in either limit (LRP) or target reference points (TRP). Primary species can therefore also be referred to as 'managed species'.

Secondary species (MSC Component 2.2):

- Species in the catch that are not covered under P1
- Species that are not managed in accordance with limit or target reference points, i.e. do not meet the primary species criteria
- Species that are out of scope of the programme, but where the definition of ETP species is not applicable (see below).

ETP (Endangered, Threatened or Protected) species (MSC Component 2.3) are assigned as follows:

- Species that are recognised by national ETP legislation
- Species listed in binding international agreements (e.g. CITES, Convention on Migratory Species (CMS), ACAP, etc.)
- Species classified as 'out-of scope' (amphibians, reptiles, birds and mammals) that are listed in the IUCN Redlist as vulnerable (VU), endangered (EN) or critically endangered (CE).

Both primary and secondary species are defined as '**main**' if they meet the following criteria:

- The catch comprises 5% or more by weight of the total catch of all species by the UoC;
- The species is classified as 'less resilient' and comprises 2% or more by weight of the total catch of all species by the UoC. Less resilient is defined here as having low to medium productivity, or species for which resilience has been lowered due to anthropogenic or natural changes to its life-history;
- The species is out of scope but is not considered an ETP species (secondary species only);
- Exceptions to the rule may apply in the case of exceptionally large catches of bycatch species.



2.4.3 Bycatch (primary and secondary)

According to DRMM, the most reliable source of data for non-discarded species is the logbooks. Observer data are available to evaluate discards (Table 9), but while accurate are less comprehensive. The observer data for 2014 and 2015 (average) have been scaled up to fleet level based on the total landings of albacore (from the logbook data) and the percentage of albacore retained (i.e. landed as indicated in the observer data – this is 99 %).

The scaling factor (SF) was calculated as follows:

1. Albacore landings (2014; 2015) raised to total catch (ALB_{total}):

 $ALBtotal = rac{logbook \ data \ (albacore; 2014 + 2015)}{\% \ albacore \ retained \ (99\%)}$

2. Scaling factor (SF):

$$SF = \frac{ALBtotal}{observed catch (albacore; 2014 + 2015)}$$

The observer data for each species were then raised as follows:

 $Species_{total} = SF x (average observed catch Species (2014; 2015))$

Table 8. Landings by the fishery from 2014 and 2015, from logbook data (DRMM), with the percentage species composition. Note: Primary species in bold; all others are Secondary species. Albacore and yellowfin are already assessed under Principle 1.

Species French	English	Scientific	Landings 2014 (t)	Landings 2015 (t)	% 2014	% 2015
Germon	Albacore	Thunnus alalunga	2,905	3,367	53	54
Thon à nageoires jaunes	Yellowfin	Thunnus albacares	758	1,069	14	17
Thon obèse	Bigeye	Thunnus obesus	703	794	13	13
Marlin bleu	Blue marlin	Makaira nigricans	237	238	4.4	3.8
Thazard	Wahoo	Acanthocybium solandri	206	230	3.8	3.7
Mahi mahi	idem	Coryphaena hippurus	184	79	3.4	1.3
Espadon	Swordfish	Xiphias gladius	117	107	2.2	1.7
Saumon des dieux	Opah	Lampris guttatus	116	153	2.2	2.5
Marlin rayé	Striped marlin	Kajikia audax	102	100	1.9	1.6



Species French	English	Scientific	Landings 2014 (t)	Landings 2015 (t)	% 2014	% 2015
Bonite	Skipjack	Katsuwonus pelamis	33	37	0.62	0.60
Papio	Brilliant and sickle pomfret	Eumegistus illustris Taractichthys steindachneri	27	37	0.49	0.59
Marlin noir	Black marlin	Istiompax indica	2	26	0.04	0.42

Table 9. Species and catch (retained and discarded) as recorded by observers, 2013 - 2015; percentage by species estimated for all three years; catch weight scaled up to fleet level for the average of 2014 and 2015, as described above. Only species with a catch >10 kg in one of the three years have been included (except for ETP species). Note: Primary species in bold; all others in black font are Secondary species. ETP species are in blue font. Albacore and yellowfin are already assessed under Principle 1. Source: DRMM.

	weight	(tonnes)		% (all	estimated
Species	2013	2014	2015	three years combined)	fleet catch (2014 and 2015 average, t)
ALBACORE	124	154.0	119.0	43.60	3168
BIGEYE	51.9	48.8	44.8	15.90	1083
YELLOWFIN	24.7	36.4	49.6	12.10	996
BLUE MARLIN	10.6	16.1	11.6	4.18	320
OPAH / MOONFISH	10.4	11.0	11.1	3.56	256
WAHOO	7.77	10.8	6.12	2.70	196
SWORDFISH	7.10	4.76	7.83	2.16	146
STRIPED MARLIN	5.61	8.78	3.95	2.01	147
BLUE SHARK	3.65	7.83	4.71	1.77	145
MAHI MAHI / DOLPHINFISH / DORADO	5.14	7.66	1.35	1.55	104
PELAGIC STING-RAY	4.03	3.83	4.90	1.40	101
SHORT FINNED MAKO SHARK	2.76	5.90	3.21	1.30	105
SKIPJACK	1.55	3.97	2.94	0.93	80.0
SHORT-BILLED SPEARFISH	1.63	3.85	2.08	0.83	68.8
OCEANIC WHITE-TIP SHARK	1.31	3.00	2.54	0.75	64.1
ESCOLAR	1.19	2.60	2.01	0.64	53.4
LONG FINNED MAKO SHARK	0.88	3.49	1.34	0.62	55.9
OILFISH	1.25	1.48	2.53	0.58	46.4



	weight (tonnes)			% (all	estimated mean annual
Species	2013	2014	2015	three years combined)	fleet catch (2014 and 2015 average, t)
BLACK MARLIN	0.91	1.04	2.16	0.45	37.0
SLENDER SUNFISH	0.82	2.13	0.65	0.39	32.2
SICKLE POMFRET	1.07	0.82	1.04	0.32	21.5
ROUDI ESCOLAR	0.50	0.90	1.05	0.27	22.6
SNAKE MACKEREL	0.86	1.06	0.49	0.26	18.0
GREAT BARRACUDA	0.45	0.72	1.01	0.24	20.0
BRONZE WHALER SHARK	1.58	0.37	0.14	0.23	5.90
SAILFISH (INDO-PACIFIC)	0.37	0.49	0.87	0.19	15.8
LONGSNOUTED LANCETFISH	0.38	0.68	0.58	0.18	14.6
BLACK MACKEREL	0.22	0.45	0.54	0.13	11.5
OCEAN SUNFISH	0.22	0.11	0.44	0.08	6.39
SILKY SHARK	0.09	0.28	0.37	0.08	7.47
UNSPECIFIED	0.18	0.25	0.07	0.06	3.76
SANDBAR SHARK	0.06	0.44	0	0.05	5.05
SARGENT MAJOR	0	0.36	0.07	0.05	5.06
BIGEYE THRESHER SHARK	0.21	0.15	0.06	0.05	2.41
ATLANTIC POMFRET / RAY'S BREAM	0.05	0.34	0.01	0.04	4.03
SILVER-TIP SHARK	0.06	0.23	0.05	0.04	3.16
RED SEA CATFISH	0	0.17	0.14	0.03	3.64
DEVIL MANTA RAY (Mobula nei)	0	0	0.29	0.03	3.31
CRESTFISH/UNICORNFISH	0.09	0.08	0.07	0.03	1.74
PELAGIC THRESHER SHARK	0.02	0.07	0.07	0.02	1.66
GIANT MANTA	0	0.15	0	0.02	1.70
DUSKY SHARK	0	0.13	0	0.01	1.50
SHORTSNOUTED LANCETFISH	0.03	0.04	0.035	0.01	0.88
DEALFISHES	0.03	0.06	0.01	0.01	0.75
BLACK GEMFISH	0.02	0.03	0.04	0.01	0.81
EUROPEAN SPRAT	0.08	0	0	0.01	0.00
PETRELS AND PUFFINS	0.02	0.02	0.02	0.01	0.56

	weight (tonnes)			estimated	
				% (all three	fleet catch
Species	2013	2014	2015	years combined)	average, t)
BRILLIANT POMFRET	0.01	0.01	0.05	0.01	0.68
BLUE SPRAT	0.04	0.03	0	0.01	0.36
TRIPLE-TAIL	0.07	0	0	0.01	0.00
TIGER SHARK	0.07	0	0	0.01	0.00
BLACKTIP REEF SHARK	0	0	0.06	0.01	0.70
FILEFISH (UNICORN LEATHERJACKET)	0	0.06	0	0.01	0.68
GREATER AMBERJACK	0.01	0.03	0.02	0.01	0.58
CRESTFISH	0.01	0.02	0.02	0.01	0.51
GREAT HAMMERHEAD	0.05	0	0	0.01	0.00
HAPUKU (HAPUKU WRECKFISH)		0.04	0	0.00	0.49
SOAPFISH	0	0	0.04	0.00	0.47
RAINBOW RUNNER	0.04	0	0	0.00	0.00
SHARPTAIL MOLA	0	0	0.04	0.00	0.46
SCALLOPED HAMMERHEAD	0	0	0.04	0.00	0.44
RAZORBACK SCABBARDFISH	0	0.02	0.02	0.00	0.41
GALAPAGOS SHARK	0		0.03	0.00	0.32
BATFISH	0	0.02	0	0.00	0.27
BARRACOUTA (SNOEK)	0	0	0.02	0.00	0.25
BARRACUDINAS (FAMILY)	0	0	0.02	0.00	0.24
SPANISH MACKEREL (NARROW- BARRED)	0.02	0	0	0.00	0.00
AMBERJACKS	0	0.02	0	0.00	0.21
GOLDRIBBON SOAPFISH	0	0	0.02	0.00	0.20
BLACK-FOOTED ALBATROSS	0	0.02	0	0.00	0.17
SMOOTH HAMMERHEAD	0	0.01	0	0.00	0.16
SLENDER TUNA	0.01	0	0	0.00	0.00
GLAUERT'S ANGLERFISH	0	0	0.01	0.00	0.10
OMOSUDID		0	0.01	0.00	0.14
SHARK FINS	0	0.01	0	0.00	0.09
LEATHERBACK TURTLE (NEW FAO)	0.01	0	0	0.00	0.00



	weight	(tonnes)		% (all	estimated
				three vears	fleet catch (2014 and 2015
Species	2013	2014	2015	combined)	average, t)
CAPE PIGEON	0.01	0	0	0.00	0.00
DRIFT FISH	0.01	0	0.01	0.00	0.06
GREEN TURTLE	0	0	0.01	0.00	0.12
HAWKSBILL TURTLE	0	0.01	0	0.00	0.12
LOGGERHEAD TURTLE	0.01	0	0	0.00	0.00
BIGEYE SAND SHARK	0.01	0	0	0.00	0.00
RAYS STINGRAYS MANTAS NEI	0.01	0	0	0.00	0.00
SOUTHERN RAYS BREAM	0.01	0	0	0.00	0.00
CROCODILE SHARK	0	0.01	0	0.00	0.10
GREY REEF SHARK	0.01	0	0	0.00	0.00
GULLS - TERNS AND SKUAS	0	0	0	0.00	0.05
GEMFISH (SOUTHERN OR SILVER KINGFISH)	0	0	0.01	0.00	0.09
POMFRETS AND OCEAN BREAMS	0	0	0	0.00	0.04
RAYS (TORPEDINIDAE NARKIDAE)	0.01	0	0	0.00	0.00
BIRD (UNIDENTIFIED)	0	0.01	0	0.00	0.09
ALASKA POLLOCK(= WALLEYE)	0	0.01	0	0.00	0.06
BOOBIES AND GANNETS	0.01	0	0	0.00	0.00

2.4.3.1 Main primary and secondary species

Based on Table 8 and Table 9, the only species making up >5 % of the catch other than the P1 species is bigeye (*T. obesus*). There are, however, several species that make up >2 % of the catch, which could be considered 'main' if they are deemed to be vulnerable: blue marlin (*Makaira nigricans*), opah (*Lampris guttatus*), wahoo (*Acanthocybium solandri*), swordfish (*Xiphias gladius*) and striped marlin (*Kajikia audax*). Note that all sharks are protected in French Polynesia and are therefore considered under ETP species in Section 2.4.4.

These potential 'main' species are considered below:

<u>Blue marlin</u>: The most recent assessment for blue marlin, based on a single Pacific Ocean stock, was conducted by the ISC BILLWG in 2013 (Billfish Working Group, 2013). The findings of the assessment can be summarised as follows:

• Estimates of population biomass and female spawning biomass exhibited a long-term decline during 1971 - 2011.



- Estimated relative fishing mortality (F/F_{MSY}) and fishing intensity (1-SPR)/(1-SPR_{MSY}) gradually increased from the early 1970s to the early 2000s and declined in the most recent years (2009 2011).
- Compared to MSY-based reference points, the current (2011) spawning biomass is 29 % above SSB_{MSY} and the current fishing mortality (average across 2009 2011) is inferior to F_{MSY} and 1-SPR_{MSY} by 19 % and 6 %, respectively. Therefore, based on the 2013 assessment, the blue marlin stock in the Pacific Ocean is not being overfished and is not in an overfished state.

Blue marlin is thus not considered as 'main'.

widely distributed in tropical Opah: Opah are very and temperate waters (http://www.fishbase.org/summary/1072) and may be expanding their range polewards in some areas due to warming (Smith-Vaniz et al., 2015). IUCN list opah as 'least concern' on the basis of their large range and the evaluation that fisheries are not likely to be having a major impact. Some attempt has been made to carry out a stock assessment in Hawaii, but no firm conclusions could be drawn: CPUE trends show a sharp decrease around 2000 (which may be linked to a change in bait at that time) followed by stability or a gradual increase⁵. Given that longline fishing pressure by the Hawaii-based fleet is a lot higher than in French Polynesia, the team concluded on this basis that there is no evidence that opah is vulnerable; it is not included as main.

<u>Wahoo</u>: IUCN comment as follows (Collette et al., 2011): This is a widespread species, with recent genetic evidence indicating that it has high genetic connectivity globally. FAO fisheries statistics suggest increasing landings over the past 20 years. Given that this species is fast growing and early maturing, there is no current evidence of it being significantly impacted by current fishing effort, although local depletions may have occurred. It is listed as Least Concern. Not main.

<u>Swordfish</u>: The most recent stock assessment for swordfish in the Southwest Pacific includes French Polynesia (Davies et al., 2013). The range of estimates for stock status is largely determined by two growth schedules (Hawaii vs. Australia) and outputs have therefore been categorised according to these two schedules:

- Total and spawning biomass are estimated to have declined most notably since the late 1990s, with more gradual declines before that time. Current levels of total biomass $B_{current}/B_0 = 44 68$ % and spawning biomass $SB_{current}/SB_0 = 27 55$ % (range of key model runs)
- For the current period, spawning potential is at 26 % 60 % (range of key model runs) of the level predicted to exist in the absence of fishing while assuming the historical estimated annual recruitments.
- Estimates relative to MSY reference points depend on the growth schedule used (Hawaii vs. Australia): if the Hawaii growth model is assumed, B is around the MSY level and F is below the MSY level; if Australian, B is above B_{MSY}, but F is also above F_{MSY}.

⁵ See <u>https://www.pifsc.noaa.gov/qrb/2012_10/article_15.php</u>



• Davies et al. (2013) conclude that under the Hawaiian schedule, overfishing is not occurring, while under the Australian schedule overfishing is occurring. Under both schedules however, the stock is not in an overfished state.

Furthermore, WCPFC CMM 2009-03 asks CCMs to 'exercise restraint' by not allowing the number of vessels targeting swordfish south of 20°S and their catch to go above the highest annual total for the years 2000-2005.

Based on the above, there is no evidence that swordfish are vulnerable. It is therefore not considered as main.

<u>Striped marlin</u>: The most recent stock assessment for striped marlin (Davies et al., 2012) estimates SB/SB₀ at 29 % and spawning potential at 43 % - 46 % ('current' vs 'recent'); in relation to MSY reference points the authors estimate B as above B_{MSY} . While current levels of catch are below MSY, they note that catches are approaching MSY. It is concluded that overfishing is not occurring although the stock is approaching an overfished state. The team did not consider this stock as vulnerable; it is therefore also not main.

2.4.3.2 <u>Bait</u>

The fishery mainly uses sardine and saury for bait; according to data on bait purchases in 2015, the main species was sardine (*Sardinops sagax*; ~60 %), followed by Pacific saury or sanma (*Cololabis saira*; ~30 %) with the remaining 10 % made up of mackerel and squid (source unknown). However, starting in 2016, it is reported that the fishery moved from Mexican to Japanese sardine (*Sardinops melanostichus*) and now sources 100 % of the sardine from Japan (as observed by the team at the site visit).

The total quantity of bait imported through Customs for fishery use in 2015 (classified as "bait for offshore fishery") was 1555 t, representing 17 % - 25 % of the total size of the UoA fishery (depending on how the total size of the fishery is assessed: landings vs. landings + discards + bait). This tonnage however does include unknown but relatively small quantities used for the coastal fishery as well as some purchased by foreign vessels which reprovision in Papeete. On this basis, the sardines and the saury would both count as 'main' species, but the other bait species would not.

2.4.3.3 Status and management of main bycatch species

<u>WCPO bigeye</u>: Since bigeye has reference points used in management, it would be designated as a 'primary' species. SPC produced a new stock assessment for WCPO bigeye tuna in 2017 (McKechnie et al., 2017). The 2017 stock assessment incorporates the following changes since the previous assessment:

- A further three years of data since the last stock assessment was done in 2014 (including more biological data, catch-per-unit-effort data for longline fisheries and tagging data)
- Extension of the model time period to the end of 2015;
- New growth function based on recent ageing of otoliths;
- An alternative regional structure (with the boundaries between the tropical and northern temperate regions shifted from 20N to 10N)



- Exploration of uncertainties in the assessment model
- Improvement of diagnostic weaknesses of previous assessments.

Several model runs were presented, exploring the relative impacts of key data and model assumptions for the diagnostic case model on the stock assessment results and conclusions. The assumptions on growth function and regional structure were found to have the most significant impact on estimates of stock status with the latest assumptions showing more optimistic results. In contrast with the 2014 stock assessment, the authors placed little emphasis on the diagnostic case model, recommending instead that management advice is formulated from the results of the structural uncertainty grid. The general conclusion of the assessment could be summarised as follows:

1. All models that assume the new growth function estimate significantly more optimistic stock status than the 2014 assessment, with the stock above the limit reference point $20\%SB_{F=0}$ in all cases.

2. All models with the new growth estimate a significant 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 increase stock status, at least in the short-term.

3. Of the four sets of models in the structural uncertainty grid (the combinations of old/new growth and 2017/2014 regions), only the old growth/2014 regions models estimate spawning potential to be below $20\%SB_{F=0}$ for all models in the set. These models estimate $SB_{latest} / SB_{F=0}$ to be between 0.08 and 0.17 which is slightly more pessimistic than the structural uncertainty grid of the 2014 assessment (between 0.1 and 0.2).

4. A substantial decline in bigeye abundance was estimated by all models in the assessment and recent estimates of depletion with respect to estimates earlier in the assessment period, and with respect to estimates in the absence of fishing, are significant and appear to be ongoing, at least on a multi-year scale.

5. The significance of the recent high recruitment events and the progression of these fish to the spawning potential component of the stock are encouraging, although whether this is a result of management measures for the fishery or beneficial environmental conditions is currently unclear.

The current regional management measures for WCPO bigeye are set out in CMM 2017-01 which aims to create a bridge to the adoption of a harvest strategy (...) 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, which includes the development of management objectives and target reference points. For bigeye, until a TRP has been agreed, 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 (note that the previously, CMM 2016-01 aimed for fishing mortality for bigeye tuna to be reduced to a level no greater than F_{msy} , i.e. $F/F_{msy} \leq 1$). The restrictions on FAD use in the purse seine fishery remain in place and have been extended. The longline catch limits for bigeye equally remain in place although these do not limit this fishery since its catch of bigeye is low.

<u>EPO bigeye</u>: EPO bigeye likewise has reference points and is a primary species. According to the most recent stock assessment available (IATTC, 2015) biomass and fishing mortality at the end of 2013 were both at about 95 % of the MSY level, and the stock is projected to rebuild to at or above the MSY level by 2018. As for EPO yellowfin (Section 2.3.17), the MSY level is a relatively low proportion of B₀ (SB_{MSY}/SB₀ = 0.21). The same harvest strategy applies for



bigeye as for yellowfin (since the duration of the closure is defined on the basis of the most vulnerable stock; see Section 2.3.21).

<u>Japanese sardine</u>⁶: Japanese sardine is managed as two stocks – the Pacific (Kuroshio) stock and the Sea of Japan (Tsushima) stock. Both are managed using reference points so would be primary stocks. Stock assessments are carried out by the Japanese government Fisheries Research Agency (FRA), who estimate stock biomass relative to reference points B_{lim} (the point below which recruitment might be impaired) and B_{ban} (the point at which the fishery is closed; the lowest point in the time series). They also estimate an ABC (allowable biological catch) for various options of target fishing mortality (e.g. in the case of the Tsushima stock $F_{current}$, F_{med} and $F_{40\%SPR}$) which managers then use to set a TAC.

- For the <u>Kuroshio stock</u>, recent biomass and catches have been much lower than in the late 1980's. Most of this change has been attributed to decadal climate cycles affecting productivity and recruitment. Current SB is estimated at 548,000 t, well above both B_{lim} (221,000 t) and B_{ban} (22,000 t). Current F is estimated at 0.30 and recruitment has been increasing in recent years. The official status of Kuroshio sardine on this basis is 'good' (i.e. doing well relative to management targets); despite the fact that the biomass is an order of magnitude lower than in the 1980s. The TAC for 2016 (revised) was 479,000 t.
- The <u>Tsushima stock</u> shows the same long-term pattern; i.e. biomass and catches an order of magnitude lower than in the 1980s 1990s, but now increasing gradually. Biomass in 2015 was estimated to be above B_{lim} and B_{ban} (100,000 t and 5,000 t) but below one million t, putting the stock status at 'medium'. Current F is estimated at 0.24 and recruitment has also been increasing in recent years. The catch in 2015 was 69,000 t from Japan; South Korea took another 3,000 t. The stock is also shared with China no information could be found on Chinese catches, although the Japanese FRA notes that the three countries are working towards joint management of the stock.

<u>Pacific saury</u>: Pacific saury is fished by jiggers with lights, in the North Pacific, by vessels from Japan, Russia, Taiwan, Korea and China. The stock assessment is carried out by Japan (the FRA); some reference points ranges are available so the stock would be primary. According to the most recent assessment summary $(2016)^7$ the total catch from the stock (all countries combined) was 606,000 t in 2008, then decreased to around 400,000 t, then increased to 625,000 t in the most recent year (2015). The scientists estimate the biomass declined between 2008 - 2010, since when it has remained stable; the most recent estimate is ~999,000 t. B_{lim} is not formally agreed, but this biomass is above all likely values, although the scientists note concern over the increasing catch proportion (~25 % of biomass in 2014; the highest in the time series).

2.4.3.4 Minor species

Based on Table 8 and Table 9, minor primary species are: blue marlin, striped marlin, swordfish and skipjack. For skipjack, catches from this fishery may be from the WCPO stock

⁶ All the information presented here for Japanese stocks comes from the FRA website:

http://abchan.fra.go.jp/digests28/index.html (follow relevant links)

⁷ http://abchan.fra.go.jp/digests27/html/2709.html



or the Eastern Pacific stock; in either case, catches are very marginal relative to total catches on the stock.

In the absence of 'main' secondary species, all secondary species in Table 8 and Table 9 are considered as 'minor'.

2.4.4 ETP species

The designation of ETP species in this assessment was based on two key criteria:

- Either the species is protected by French Polynesia law under the Code de l'Environnement (arrêté 1528/2014, consolidated) which considers two categories:
 - A vulnerable or endangered species; and
 - B species which are rare or of special interest.

Those relevant to this fishery are as follows: A: manta rays, turtles (hawksbill, loggerhead, leatherback and olive ridley), petrels (5 *spp*.); and B: All sharks (except rays), whales, dolphins, green turtles

• Or WCPFC CMMs or Resolutions are in place. This concerns silky sharks (CMM 2013-08), oceanic white-tip sharks (2011-04), turtles (2008-03) and seabirds (2015-03); including species other than petrels.

2.4.4.1 Sharks

All sharks are protected in French Polynesia by a ban on targeting, landing, trade and shark feeding (arrêté 1784/2012; for a duration of 10 years). This constitutes the largest group of ETP species, with 20 species showing up in the observer data over three years 2013-15 (Table 9). Of these, only four species had an estimated total catch of >10 t / year: blue sharks, short-fin mako, long-fin mako and oceanic white-tip. Eight species had an estimated total fleet catch of <1 t / year, i.e. a small number of individuals (great, scalloped and smooth hammerheads, galapagos shark, blacktip reef shark, tiger shark, bigeye sand shark, grey reef shark and crocodile shark). The other species (bronze whaler shark, silky shark, sandbar shark, bigeye and pelagic threshers, silver-tip shark and dusky shark) were intermediate (1 t - 10 t).

It is possible to scale up the number of individuals using the same method as decribed in Section 2.4.3., to give an idea of the order of magnitude of the number of individuals of different shark species likely to have been taken as bycatch in the period 2013 - 2015. The observer data also provide information on the proportion alive/dead at point of discard; multiplying these two values gives a rough idea of the annual impact by species, excluding post-release mortality.

Post-release mortality of sharks in longlines is quite difficult to evaluate; usually pop-up tags are used, but this entails more handling than straightforward fisheries discarding, and hence may result in higher mortality. Musyl et al. (2011) and Campana et al. (2009) both suggest a post-release mortality rate for blue sharks from longlines of 15 % - 20 %. For the purpose of this approximate evaluation, a post-release mortality rate of 20 % has been applied across all species (Table 10).



Table 10. Estimated <u>order of magnitude</u> for number of individual sharks for each species impacted by the whole fishery; from scaling up observer data based on the method described in Section 2.4.3. Note: depending on how many catches were observed in a given year; it is not possible to scale up percentage survival from one or two animals so left blank where sample size was too small.

Species	-	Estimated number of individuals per year over the whole fleet (average 2013-15):	% alive at point of discard (2014 or 2015 or average)*	Assumed post- release survival	Estimated total impact per year (order of magnitude)
blue shark	Prionace glauca	4500	92	80	1200
short-fin mako	Isurus oxyrinchus	1300	80	80	500
oceanic white-tip	Carcharhinus Iongimanus	1300	67	80	600
bronze whaler shark	Carcharhinus brachyurus	900	63	80	450
long-fin mako	Isurus paucus	550	90	80	150
bigeye thresher	Alopias superciliosus	450	89	80	130
silky shark	Carcharhinus falciformis	400	60	80	200
pelagic thresher	Alopias pelagicus	200	67	80	100
silver-tip shark	Carcharhinus albimarginatus	150	78	80	50
sandbar	Carcharhinus plumbeus	50-100	88	80	15-30
black-tip reef shark	Carcharhinus melanopterus	<50			<20
crocodile shark	Pseudocarcharias kamoharai	<50			<20
dusky shark	Carcharhinus obscurus	<20			<10
great hammerhead	Sphyrna mokarran	<10			<5
smooth hammerhead	Sphyrna zygaena	<10			<5
scalloped hammerhead	Sphyrna lewini	<10			<5
tiger shark	Galeocerdo cuvier	<10			<5
grey reef shark	Carcharhinus amblyrhynchos	<10			<5
Galapagos shark	Carcharhinus galapagensis	<10			<5



Species		Estimated number of individuals per year over the whole fleet (average 2013-15):	% alive at point of discard (2014 or 2015 or average)*	Assumed post- release survival	Estimated total impact per year (order of magnitude)
bigeye sand shark	Odontaspis noronhai	<10			<5

Given that this fishery is the only pelagic longline fishery in the French Polynesia EEZ (~5 million km²), Table 10 provides a highly approximate estimate of the total fishery impact on these stocks in this area. Even for the species with the largest estimated total mortality (blue shark), this only represents about one blue shark per 4,000 km² of EEZ per year; 500 animals per year is 0.0001 per km² of EEZ or one per 10,000 km² per year (for illustrative purposes, assuming a homogeneous distribution over the EEZ).

Of these species, there is a WCPFC stock assessment for blue shark, oceanic white-tip shark and silky shark but the latter two do not include French Polynesia (east of 150°W) in the assessment area. IATTC have, however, produced an analysis of indicators for silky shark in the EPO, based on standardised CPUE in purse seine sets. All the assessments estimate that the stocks are depleted (blue shark: SB/SB₀ ~8- 10 %; silky shark SB/SB₀ ~27 % with standardised purse seine CPUE in the southern EPO down approximately a factor of 4 since the mid-90s; oceanic whitetip: SB/SB₀ ~6 %). For the other species, the stock status is not known.

2.4.4.2 Manta rays

The observer reports show one incident of bycatch of a giant manta (*Manta birostris*) in the period 2013 - 2015; it was released alive. It would not be statistically correct for this to be scaled up to fleet level; however the rate of interaction is clearly low.

Note that all other ray species in Table 9 are assessed as secondary species.

2.4.4.3 Mammals

The observer reports do not show any bycatch of mammals in the period 2013 - 2015, although there are reportedly interactions by way of depredation - these are reported in observer reports and on logbooks. The species concerned are short-finned pilot whales (*Globicephala macrorhynchus*) and false killer whales (*Pseudorca crassidens*). Vessel captains report that when they are in the area, vessels have to move at least one day's journey away to avoid losing catch to depredation which may amount to 10 % of the total catch on some occasions.

2.4.4.4 <u>Turtles</u>

The observer reports show four incidents of turtle bycatch over the three years (average 1.3 per year); one each of green (dead), hawksbill (dead), leatherback (alive) and loggerhead (dead). This would scale up to approximately (of the order of) 10 interactions / 8 mortalities per year in total across the fleet.



For green turtles (*Chelonia mydas*), the Central South Pacific population unit includes French Polynesia⁸ and is endangered, according to IUCN, although this assessment is out of date (Seminoff, 2004). The detailed picture is complex: since the 1970s/80s, nesting in Mexico and southeast Asia (Indonesia and the Philippines) has declined significantly, while nesting at the Galapagos is stable and nesting in Australia and Hawaii has increased. Green turtles are the only species that nest in French Polynesia (Figure 16); a survey of nesting at Tetiaroa by the NGO Te mana o te moana (2007/8-2012/13) suggests that this is stable or increasing. Illegal traditional capture is the biggest risk to the population in this area, according to the NGO (Petit et al., 2013).



Figure 16. Green turtle nesting beaches in French Polynesia. Colony size denoted by colour 25-100 green, 100-500 yellow, white unclassified. Source (http://seamap.env.duke.edu/swot).

The population structure of <u>hawkbill turtles</u> (*Eretmochelys imbricata*) is unclear; they are solitary nesters and therefore difficult to monitor. Hawkbills in French Polynesia could nest almost anywhere around the Pacific, although the largest nesting sites in the 'vicinity' are in Australia and Indonesia, according to IUCN, who list the species as 'critically endangered' (Mortimer and Donnelly, 2008). Again, deliberate capture is seen as the main risk to the species, along with removal of eggs and degradation of nesting habitat, although fisheries bycatch is mention.

For <u>leatherback turtles</u> (*Dermochelys coriacea*), individuals in French Polynesia might belong to the Eastern Pacific population unit or the Western Pacific population unit⁹, nesting either in Central America or in Papua New Guinea and the Solomon Islands. Both are critically endangered according to IUCN (Wallace et al., 2013a; Tiwari et al., 2013); they estimate population size as 633 mature individuals / 475 females (Eastern Pacific) and 1438 mature individuals / 1078 females (Western Pacific).

Wallace et al. (2010) defined 58 sea turtle Regional Management Units (RMUs) globally, comprising multiple nesting sites, nesting populations and breeding populations, defining core distribution areas that are considered optimal for assessing the conservation status of marine

⁸ See <u>http://www.nmfs.noaa.gov/pr/species/turtles/green.html</u>

⁹ e.g. http://www.nmfs.noaa.gov/pr/species/turtles/leatherback.html



turtles and for management applications (Gilman et al., 2013). The fishery under assessment overlaps with the five RMUs listed in Table 11 and shown in Figure 17 (note that the RMUs are continually updated as new stock information becomes available - for the latest map, see this link: <u>http://seamap.env.duke.edu/swot</u>). All of the species shown in Table 11 are listed under Appendix I of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) and Appendices I and II of the CMS (Convention on the Conservation of Migratory Species of Wild Animals, or the Bonn Convention).

An assessment of the conservation status of marine turtle RMUs by Wallace et al. (2011) evaluated the risk level of each RMU based on a range of population parameters (e.g., population size, recent and long-term population trends, rookery distribution and vulnerability, genetic diversity) and the degree of threats (e.g. bycatch, coastal development, pollution and pathogens, climate change) impacting each RMU (Wallace et al. 2011; Wallace et al. 2013b). Wallace et al. (2013b) further evaluated the relative bycatch impacts across different fishing gears across sea turtle RMUs globally. The study found that longlines were most frequently found to have the highest bycatch impact scores for individual RMUs, but this result was likely due to the higher availability of longline records than for other gear types and in general, mortality rates in longlines, with the exception of bottom-set longlines, were significantly lower than mortality rates in most nets and trawls. The relative impacts of bycatch to marine turtle populations depend on the magnitude, mortality rates, and reproductive values of individuals affected relative to amounts of fishing effort (Wallace et al., 2013b); therefore, a threat that incurs high mortality and occurs in areas of high density of reproductively valuable individuals will have a negative population-level impact. In this context, fisheries operating in near-shore areas overlapping with high-use areas for turtles are more likely to negatively affect turtle populations than offshore fisheries operating in low-use areas. The resulting risk and threat levels for each RMU considered here are shown in Table 11. The C. caretta and L. olivacea (olive ridley) RMUs were ranked amongst those at the highest risk of longline bycatch; the other three species were considered at the lowest risk. Wallace et al. (2013b) however, did acknowledge the imbalanced distribution of available marine turtle bycatch data among gear categories and geographic regions, which directly affects the ability to adequately and quantitatively assess relative by catch impacts across gear types and populations.



Table 11. Sea turtle Regional Management Units that overlap with the fishery under assessment (from Wallace et al., 2010). RMU risk and threat level (from Wallace et al., 2011), longline bycatch impact (from Wallace et al., 2013b), IUCN and conservation instruments are also shown.

Species	Common name	RMU (and overlap with EEZ)	RMU risk and threat level (from Wallace et al., 2011)	IUCN status	Conservation instruments
Caretta caretta	Loggerhead	South Pacific (overlaps entirely)	High risk, High threat, High bycatch impact	Endangered	CITES Appendix I CMS Appendix I & II
Chelonia mydas	Green turtle	Pacific south central (partial overlap)	Low risk, Low threat, Low bycatch impact	Endangered	CITES Appendix I CMS Appendix I & II
Dermochelys coriacea	Leatherback	Western Pacific (overlaps entirely)	High risk, Low threat, Low bycatch impact	Critically endangered (West Pacific Ocean subpopulation)	CITES Appendix I CMS Appendix I & II
Eretmochelys imbricata	Hawksbill	Pacific south central (overlaps entirely)	High risk, High threat, Low bycatch impact	Critically endangered	CITES Appendix I CMS Appendix I & II
Lepidochelys olivacea	Olive Ridley	West Central RMU (overlaps entirely)	Low risk, High threat, High bycatch impact	Vulnerable	CITES Appendix I CMS Appendix I & II





Figure 17. Sea turtle Regional Management Units according to Wallace et al. (2010). The fishery under assessment overlaps with the *Caretta caretta* south Pacific RMU (1), *Chelonia mydas* Pacific South Central RMU (2), *Dermochelys coriacea* Western Pacific RMU (3), *Eretmochelys imbricata* Pacific Central West (4) and *Lepidochelys olivacea* Western Pacific RMU (5).

A review of turtle bycatch in the Western and Central Pacific Ocean was undertaken by the South Pacific Commission on behalf of the Secretariat for the Regional Environment Programme in 2001 (Anon, 2001). The review concluded that deep day sets in the Western South Pacific (10°S - 35°S) typical of those in the American Samoa-based albacore longline fishery had the lowest rate of interaction, while shallow sets in the Western Tropical Pacific (10°N - 10°S) accounted for the highest interaction rates (NPOA-Turtles). In an ecological risk assessment (ERA) for species caught in WCPO tuna fisheries, Kirby (2006) further found that turtles most frequently encountered in longline fisheries were juvenile and were mostly alive on haulback. For turtles, effective conservation measures can therefore also be directed at treatment post-capture as the survival of these live but probably distressed and fatigued animals may depend on the crew dehooking the turtle without damaging it, and then allowing it to recuperate (Kirby, 2006).

At regional level, the WCPFC has issued CMM-2008-03 on the conservation and management of sea turtles, requiring the implementation of the FAO Guidelines to 'Reduce Sea Turtle Mortality in Fishing Operations', which include the use of wide circle hooks; using fish rather than squid for bait; and setting hooks deeper than turtle abundant depths (40 m - 100 m). The CMM also details reporting requirements for CCMs and best practice guidelines to ensure the survival of captured sea turtles. For longline vessels, the CMM specifically requires that operators carry and use line cutters and de-hookers to handle and promptly release sea turtles caught or entangled and, where appropriate, carry and use dip-nets. CCMs with longline fisheries other than shallow-set swordfish fisheries are furthermore urged to:



- Undertake research trials of circle hooks and other mitigation methods in those longline fisheries;
- Report the results of these trials to the Scientific Committee and Technical and Compliance Committee.

2.4.4.5 <u>Birds</u>

Bird bycatch is not perceived to be a problem in this fishery. According to the observer reports, total observed capture of birds over the three years 2013 - 2015 is: 17 petrels (species unknown; four alive), four unidentified skuas, two cape pigeon (*Daption capense* – a common petrel), one black-footed albatross (*Phoebastria nigripes*) and one booby (species unknown). Since the petrels are not identified to species, it is impossible to say whether they correspond to the species protected under French Polynesia law or not. Cape pigeon are of 'least concern', according to IUCN (Birdlife International, 2017a), while black-footed albatross are 'near-threatened' (Birdlife International, 2017b) due to a past decline from longline bycatch; however the population is now thought to be stable or increasing. Neither of these species are on the red list for French Polynesia (IUCN, 2015) or listed in the Code de l'Environnement. However, all birds are considered as ETP on the basis of the WCPFC Resolution on seabirds (2015-03). Bird identification guides are being used by the observers since the start of 2016 however identification issues are thought to persist, potentially due to discrepancies between the SPC guides and species actually encountered in French Polynesia – this is reportedly being addressed with SPC.

WCPFC seabird conservation measure (CMM 2015-03) requires that seabird bycatch mitigation measures are mandatory for all longline fishing effort south of 30°S. While a small fraction of the EEZ of French Polynesia exits below 30°S, fishing effort by the fleet under consideration here is minimal (between 2010 – 2015 three fishing events were recorded (Figure 5)).

An analysis by Watling (2002), based on interviews with WCPO industry stakeholders and observer data, indicated that although seabird interactions with longline vessels operating in tropical and subtropical areas of the WCPO are very rare (except in the Hawaii-based longline fisheries) this does not preclude the possibility of highly threatened seabird populations being impacted. The findings of this study were supported by Gilman (2006) who evaluated seabird bycatch in the WCPO longline fisheries based on the following:

- Quantitative information on seabird bycatch in longline fisheries operating in the WCPO, based on SPC/OFP observer data for tropical and subtropical Pacific pelagic longline fisheries, representing 0.8 % of total effort from 1995 - 2005, distributed across seasons and covering many of the areas within the WCPO, particularly in the EEZs of Forum Fisheries Agency Members
- Comparison of the distributions of seabird species known to be vulnerable to capture in longline fisheries in other regions to the distribution of longline effort in the tropical and subtropical WCPO;
- Fishermen interviews;


 Identification of tropical and subtropical Pacific seabird species susceptible to longline capture based on the characteristics of seabird species that are captured in temperate zone longline fisheries.

Gilman (2006) concluded that existing observer data are currently insufficient to support a conclusion with any high level of certainty that no pelagic longline fisheries operating in the tropical Pacific Islands region could be contributing to existing or cause future seabird population declines.

A risk assessment has since been conducted by Filippi et al. (2010) which compared the distribution of seabirds and their likelihood of capture in relation to longline fishing effort in the WCPFC area. The study used a Productivity-Susceptibility Analysis (PSA) to identify the areas of greatest risk of occurrence and impacts of bycatch, the species of greatest concern for population level impacts and the fisheries which contributed the greatest risk. The resulting areas of likely species-level effects of fishing in the WCPFC Convention Area are shown in Figure 18.



Figure 18. 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).

Based on the above information, as well as updated best practice advice from the Agreement for the Conservation of Albatrosses and Petrels (ACAP), the Scientific Committee has



recommended that the WCPFC revise the current CMM for seabirds. Birdlife International (2012) subsequently reviewed CMM-2007-04 and made recommendations for the scope of the updated CMM in the WCPFC. For the fishery under assessment, the following recommendation is relevant:

"The WCPFC conservation measures should be updated to require best practice mitigation (see CMM-2007-04) be applied in these additional risk areas especially from $25^{\circ}S - 30^{\circ}S \dots$ "

Subsequent analysis of overlap of threatened seabirds (five albatross species and two petrels) and bycatch report areas concluded a meaningful risk to seabirds between 25°S and 30°S and mitigation should include the extension of CMM 2012-07 (now CMM 2015-03) northwards to 25°S (Baird et al., 2015). At the Twelfth Session of the WCPFC a proposal to change the southern boundary to 25°S (WCPFC12-2015-DP11) was considered, but consensus was not reached. The southern hemisphere 25°S latitudinal line passes inside the EEZ of French Polynesia and as such, amendments to seabird bycatch mitigation by the UoAs will be required if this recommendation is established.

2.4.4.6 Management of ETP species

The Code de l'Environnement sets out the rules for protected species, as well as the sanctions and penalties for breaking them. Essentially, for Category A species the following is not allowed:

- intentional disturbance, capture or removal, regardless of life stage and including eggs and nests; also their transport, use, possession, sale, purchase, import or export, whether they are live or dead;
- destruction, alteration, modification or degradation of their habitats.

Protection for Category B species defaults to the same requirements, but the government has authority to adapt the requirements for protection for these species if appropriate.

Aside from the ban on retaining sharks, there no specific regulations in relation to ETP species which are imposed by the French Polynesia government on the fishery (e.g. requirements for types of hooks, operation of gear etc.). Where applicable, management instead defaults to the WCPFC CMMs such as CMM 2008-03 (sea turtles) requiring longline vessels to use line cutters and dehookers for turtles (as well as dip nets where necessary – this would normally apply to larger vessels with a high freeboard). The vessels do generally use offset circle hooks, but this is not a legal requirement.

2.4.5 Habitats

This fishery is strictly a pelagic fishery, and does not interact with benthic habitats. Although the pelagic realm constitutes a 'habitat' this is dealt with under ecosystems below.

Another issue which needs to be considered is the issue of unobserved mortality due to ghost fishing by discarded or lost fishing gear which may consist of monofilament and/or hooks. Currently, information on the proportion of hooks that are lost at sea (via bite-offs of terminal tackle or loss of complete branchlines) is not collected on logbook or observer forms. Records of the number of terminal tackle or branchlines that are lost per set/trip/year per vessel are



therefore not available. Vessels are always asked by DRMM to retrieve gear but this is not formalised. Additionally, no monitoring of lost hooks takes place. However, lost pelagic longline gear is only likely to continue to fish as long as bait remains on the hooks. Bait tends to be stripped relatively quickly off the hooks and as such, the mortality rate associated to lost longlines is usually low (Macfadyen et al., 2009).

2.4.6 Ecosystem

The western central Pacific is largely a stratified, oligotrophic system, although equatorial upwelling extends from the eastern Pacific in a 'cold tongue', until it encounters a pool of surface warm water in the western equatorial Pacific (see Figure 10). Although the 'cold tongue' has higher primary production than the 'warm pool', most of the tuna catch is taken in the western Pacific, providing a puzzle as to the apparently discrepancy in primary vs. secondary productivity in this area; most likely a function of the fact that tuna move into and out of and around the fringes of the high productivity area (WPFMC, 2009).





The most tropical pelagic species (e.g. skipjack, yellowfin, blue marlin) prefer warm, wellmixed surface layers. Other pelagic species such as albacore, bigeye, striped marlin and swordfish prefer cooler waters (i.e. usually higher latitudes or greater depths). Temperature preference may also vary by size; adults usually have a wider temperature tolerance than juveniles. During spawning, adults of many species move to warmer waters, the preferred habitat of their larval and juvenile stages. In both the North and South Pacific, there is a seasonal movement of large pelagics toward the pole in the warmer seasons, with fishing for these species year-round in the tropics and seasonal in more temperate zones. Large-scale oceanographic events (ENSO) also change water temperature and productivity across the



Pacific, and hence have a significant effect on the range and movement patterns of pelagic species.

Islands and seamounts disrupt the flow of currents, creating turbulence, promoting mixing and hence increasing productivity around and downstream. Forage fish concentrate in these areas, which thus also tend to concentrate tunas and other large pelagics. Tunas will also concentrate near upwelling zones and along gradients in temperature and salinity, for the same reason. These frontal zones also function as migratory pathways across the Pacific for other migratory species such as turtles.

It is clear that fishing has an impact on marine ecosystems, or at least, plays a role in the ecosystem as much as any other predator. A study of the Hawaii longline fishery targeting bigeye tuna shows that as bigeye catch rate has declined with increasing effort (as has the catch rate of other large fish), the catch rate of intermediate-sized fish (such as lancetfish and snake mackerel) has increased such that these are now apparently the most abundant species in the system. No change is, however, apparent at smaller sizes (Polovina and Woodworth-Jefcoats, 2013). It is important to remember, however, that fishing effort in the French Polynesia EEZ is low relative to most areas of the tropical / sub-tropical Pacific; this fishery is the only commercial tuna fishery allowed to fish in the EEZ. The ecosystem is therefore more likely to approach the unfished state than in more heavily-fished areas such as Hawaii.



2.5 Principle Three: Management System Background

2.5.1 Jurisdictions in the area of operation

As already noted, the EEZ of French Polynesia straddles the convention areas of both the Western and Central Pacific Fishery Commission (WCPFC) and the Inter-American Tropical Tuna Commission (IATTC); French Polynesia is a participating territory for WCPFC only, although it provides data to both Regional Fishery Management Organisations (RFMOs). Although in practice a higher proportion of the EEZ is in the IATTC zone, this arrangement makes sense for political reasons; French Polynesia is culturally part of Polynesia and has no particular strong links with Latin America.

This has no bearing for albacore, since the South Pacific albacore stock is a shared stock with cooperative management between the two RFMOs. Yellowfin, however, is managed as two separate stocks. Since the fishery may operate on both stocks, Principle 1 considers both the WCPFC and IATTC stock management framework. The extent to which the non-membership of French Polynesia in IATTC undermines the IATTC management framework is considered under Principle 1 (Section 2.3.23) – in short, it does not undermine it at all. Therefore, under Principle 3, the team considered that the only jurisdictions that apply are i) French Polynesia and ii) WCPFC.

The fishery under consideration operates exclusively within the French Polynesian EEZ and and vessels are not authorized to fish in adjacent high seas areas nor through any bilateral agreements with neighbouring Pacific Island Countries (PICs). Note that there are two major jurisdictional areas in which the south Pacific albacore and yellowfin tuna fisheries operate: the zones (EEZs) of FFA member countries and the high seas: in-zone and the high seas.

For the current assessment Principle 3 considers only the 'in-zone' element of the regional management framework (including WCPFC CMMs, and regional cooperation via FFA; French Polynesia only became a member of the Pacific Islands Forum (PIF) in September 2016 but has not yet decided upon its eventual level of involvement with FFA – it still has observer status) and other organisations grouping the southern states – Southern Committee and TVM) and ii) the French Polynesian management system for their EEZ.

For the purpose of this section, the key components of the governance and fishery management framework are:

- International arrangements, including the Western Central Pacific Fisheries Commission (WCPFC), the tuna RFMO for the Western and Central Pacific Ocean, and its associated bodies
- The French Polynesian national government and in particular the Ministry for Primary Resources Development (MPF) and specifically through the Directorate of Marine Resources (DRMM). The French national government also plays a role in surveillance matters in-zone and on the high seas.

Two regional agencies play a very significant role in the management system through the provision of technical and other services to their member countries. The two key agencies are: a) the Forum Fisheries Agency (FFA) and it associated committees, which acts as a forum of common interests and assists its members with the management and development of their



tuna fisheries and b) the Secretariat to the Pacific Community (SPC), which provides stock assessments and other scientific advice to both French Polynesia and its other member countries and participating territories, as well as acting to provide scientific services to the Commission, as per Article 14 of the WCPFC Convention.

In addition to these two agencies, there are a number of other regional organisations related specifically to the south Pacific albacore fishery. Together, they represent a comprehensive, somewhat complex, network of organisations with membership and mandates that have varying degrees of overlap, as described below.

2.5.2 International management framework

2.5.2.1 Western and Central Pacific Fisheries Commission

The WCPFC was established under the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western Central Pacific Ocean (2000), which is a multilateral agreement having the primary objective of providing for the long-term conservation and sustainable use of highly migratory fish stocks in the Western and Central Pacific Ocean. The WCPFC is the largest of the tuna RFMOs, with over half of the world's tuna catch taken within the Convention Area. These stocks include tunas, billfish and other species listed in Annex I of the 1982 UN Convention, but not sauries (Art. 3.3 of the Convention).

The WCPFC Convention follows closely the provisions of the UNFSA, including in particular:

- The objective of ensuring the long-term conservation and sustainable use of highly migratory fish stocks (Article 2).
- The general principles in Article 5 of the 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).
- 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 Commission has 26 Members, of which most are small island developing states (SIDS). All major coastal and fishing states in the WCPO are Members, except for Vietnam. Current members are: Australia, China, Canada, Cook Islands, European Union, Federated States of Micronesia, Fiji, France, Indonesia, Japan, Kiribati, Republic of Korea, Republic of Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Chinese Taipei, Tonga, Tuvalu, United States of America, Vanuatu. Participating Territories are: American Samoa, Commonwealth of the Northern Mariana Islands, **French Polynesia**, Guam, New Caledonia, Tokelau, Wallis and Futuna. Several other states are



granted cooperating non-member (CNM) status on an annual basis. As CNMs, they participate as observers and agree to comply with WCPFC measures in return for being authorised to allow their vessels to fish in the WCPO within set limits. CNM status requests in 2016 for 2017 have been approved for Ecuador, El Salvador, Liberia, Mexico, Panama, Thailand and Vietnam (WCPFC13-2016-08 – updated from WCPFC-TCC11-2015-08_rev3).

The Compliance Monitoring Scheme (CMM 2015-07) shall be reviewed in 2017 (WCPFC13-2016-24). The Commission and its subsidiary bodies were reviewed in 2011 and the overall findings were considered by WCPFC8 in 2012. The review resulted in a significant number of recommendations, many of which have now been addressed. The executive director reports annually to the Commission on progress with addressing outstanding recommendations of the review, including the development of a Commission Strategic Plan (Draft dated 16 November 2016) and a new Corporate Plan (for the most recent report see WCPFC13-2015/16). An independent review of the Commission's science structure and functions (MRAG, 2008) was conducted in 2008 (MRAG 2008), resulting in overhauling of the operation of the Scientific Committee, and adoption of a peer review process and other changes to the data and science functions. SC12 again endorsed a process for a multi-year schedule for independent review of stock assessments.

The subsidiary bodies of the Commission provide extensive, detailed reports to the Commission (see for example WCPFC13 SC12 Summary report, 31 October 2016; WCPFC TCC12 Summary report, 17 November 2016; and Northern Committee 12 Summary report, 13 September 2013), which include a range of specific advice and recommendations for full Commission consideration. Decision-making is open, with the process, outcomes and basis for decisions recorded in detail in minutes of Commission sessions and publicly available papers. Consensus is the general rule for decision-making by Commission Members during their annual meetings. If consensus cannot be reached, voting, grounds for appealing decisions, conciliation and review are all part of the established decision-making process, as described in Article 20 of the Convention. If a vote is invoked by the Chair, Participating Territories cannot participate.

The 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 (CMMs), and other Commission rules and decisions, including the Rules for Scientific Data to be Provided to the Commission, and the Rules and Procedures for Access to and Dissemination of Data Compiled by the Commission. In addition to Member participation, the WCPFC allows participation by non-members and territories (Article 44 and Annex1), with particular opportunities for CNMs, and allows observers to participate in meetings of the Commission and its subsidiary bodies, including the Scientific Committee, the Technical and Compliance Committee and the Finance and Administration Committee. As part of the conditions for CNM status, applicants are required to annually provide "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, para 2b.).



The records of Commission meetings show that the Commission takes a wide range of advice and inputs from its subsidiary bodies, members and observers before implementing decisions, including the adoption of conservation and management measures. Scientific advice clearly identifies the extent to which different sources of information have been taken into account. Progressive records of the Scientific Committee and the Commission provide a comprehensive record of the degree to which scientific advice has been incorporated into management decisions (CMMs). Perhaps more significantly, these records and reports to the Commission (e.g. WCPFC13-2016 which reported little progress with implementing tropical tuna CMM 2015-01) also indicate little progress with the effectiveness of these CMMs, as reflected in catch and effort statistics and stock assessments.

The WCPFC Convention requires the Scientific Committee to "recommend to the Commission a research plan, including specific issues and items to be addressed by the scientific experts or by other organizations or individuals, as appropriate, and identify data needs and coordinate activities that meet those needs". The WCPFC Strategic Research Plan (SRP) 2017–2019 was adopted by the Scientific Committee (SC12) and approved by consensus by the WCPFC in 2016, pending funding availability. The Plan is substantially directed towards providing information to enable the Commission to avoid overfishing or depletion of targeted stocks and the application of an ecosystem approach. However, the implementation process in the Plan is also designed to contribute to improving governance and policy, through the development of management information tools such as Management Strategy Evaluation (MSE) and the development of relevant scientific and technical capacities in developing countries and territories should be a strong feature of the implementation of any Plan. Promoting such involvement should be aimed at both utilising available expertise from developing countries and territories and for building scientific and technical capacity therein.

WCPFC measures relevant to the French Polynesia albacore and yellowfin fishery have already been outlined to some extent under Principles 1 and 2 previously. These CMMs represent a response by the Commission to managing longline effort on albacore and yellowfin and to minimize the mortality of sea turtles, sharks, seabirds and other non-target species.

2.5.2.2 Tokelau Arrangement

The Tokelau Arrangement between most South Pacific members of FFA, which provides a cooperative framework for these coastal states/territories to set management measures specifically for albacore within their EEZs, came into force on 14 December 2014. Although the arrangement refers to 'tuna and tuna-like species' the catch of these species is dominated by albacore. FFA will provide Secretariat services for the Agreement, which foresees that the Parties to the Arrangement will hold an annual meeting to review the stock status of South Pacific albacore (as well as other species if applicable) and apply measures 'necessary for their management and conservation'. Specifically, the meeting will:

- consider relevant data including stock assessments, fisheries information and economic and socio-economic information;
- consider management measures, which might include i) regulation of effort and/or catch;
 ii) implementation of a harvest strategy; iii) agreement of precautionary reference points and harvest control rules, as required for the harvest strategy (if they are not regionally



agreed); iv) gear restrictions, closed areas or closed season); v) any other measures that seem relevant;

- consider observer, inspection, surveillance and enforcement programmes ;
- enable cooperation within WCPFC for more effective development and implementation of CMMs; and
- adopt a budget for tuna management.

More specifically, the Arrangement sets out a framework by which a 'Party Total Allowable Catch' (PTAC - TAC for the fishery within the EEZs of contracting parties to the agreement) is established, and divided into national 'PACs'. The PTAC is agreed at the annual meeting, or may be agreed for up to three years at a time. The PTAC in practice applies to the South Pacific albacore stock. PACs or part of PACs are transferrable between states by agreement. Rules in relation to joint monitoring and control, in order to implement these PACs and the regional PTAC, remain to be defined, but are foreseen to take the form of a joint vessel register, port-to-port monitoring by VMS and electronic logbooks, etc. Schedule 1 of the draft Agreement sets out an initial proposal for the PTAC and the individuals PACs, based on a combination of each nation's average or highest catch between 2001 and 2012 (the nations with historically very small catches being allocated an aspirational share of 2,500 t). Note that since MSY is estimated at ~99,000 t, this arrangement leaves only ~20,000 t available for the high seas fishery, should WCPFC wish to follow up this Arrangement with an overall TAC on the whole stock.



Table 1	2. Schedu	le 1 of the	Tokelau	Arrangement.
				/

Party	Highest catch 2001-12	Average catch 2001-12			
			Year (MY 1)	Proportion	
			PAC	of TAC	
Australia	2,526	578	2,526	3.21%	
Cook Islands	10,736	8,602	9,698	12.33%	
Fiji	7,294	3,836	7,294	9.27%	
Niue	337	0	2,500	3.18%	
New Zealand	6,700	3,100	6,700	8.52%	
Samoa	4,824	1,730	4,824	6.13%	
Solomon Islands	20,879	12,920	14,500	18.44%	
Tokelau	252	116	2,500	3.18%	
Tonga	1,388	715	2,500	3.18%	
Tuvalu	736	569	2,500	3.18%	
Vanuatu	8,376	6,500	8,376	10.65%	
New Caledonia	1,923	1,716	2,500	3.18%	
French Polynesia	4,555	3,407	4,555	5.79%	
American Samoa	5,173	2,224	5,173	6.58%	
Wallis & Futuna	34	3	2,500	3.18%	
TOTAL	75,733	46,016	78,646		

2.5.3 French Polynesia management framework

At the moment there is no existing legislation that one could call a "Fishery Management Plan" although such has been in some "draft" instrument for guite a few years. However, a legal basis now exists for such a management plan to be implemented within the current Code d'Environnement. The Ministry of Primary Resources Development, through the DRMM, is charged by exisiting laws, with management and control of the exploitation of the marine resources within the EEZ, with a specific mandate to develop a ministerial decree for a fisheries resources management plan. Other "Country Laws" (Lois du Pays N° 2016-9 of 25 February 2016 and N° 2016-13 of 14 April 2016) promulgate Environmental Law and establish a co-managed marine protected area (Category VI MPA under IUCN - sustainable use of natural resources) for the entire EEZ of French Polynesia under the authorities of both the ministries responsible for the environment and for marine natural resources. There are other government agreements as power of law, such as Deliberation N° 88-183 AT (as modified) of 8 December 1988, which already placed certain regulations on fishing and thus the fishery, in addition to a Deliberation N° 97-32/APF (as modified) of 20 February 1997 relative to regulations concerning the exploitation of living marine resources in territorial waters and the rest of the EEZ of French Polynesia, which includes a ban on the practice of purse seine fishing within the EEZ. The current Code d'Environnement includes: 1) a ban on the taking (incidental or otherwise) of any sharks; 2) a ban on the practice of shark finning; 3) establishes



the EEZ as a shark sanctuary; 4) declares the entire EEZ as a marine mammal sanctuary with rules and regulations for whale-watching and dolphin encounter eco-tourism; and 5) declares the entire EEZ as a marine turtle sanctuary also with attendant rules, regulations and penal consequences for transgressions.

2.5.4 Regional and sub-regional organisations

A summary of the regional fisheries organisations involved in the management of the south Pacific albacore and yellowfin fishery is illustrated as follows:

2.5.4.1 Forum Fisheries Agency (FFA)

There are significant FFA member country EEZ longline fisheries for albacore and yellowfin tuna, with well over half of the catch taken from within these zones in the western Pacific. Despite a number of attempts, there has been no agreement reached on an overall catch cap (or allocation) for in-zone catches of albacore (at the moment) by FFA member countries, as has occurred for the PNA purse seine skipjack fishery (see discussion under Tokelau Arrangement). Bigeye tuna are recognised to be an important economic element of the albacore/yellowfin longline fishery. The majority of catch of yellowfin and bigeye is taken in the equatorial region, particularly within the EEZs of PNA member countries. In addition, increasing catches of albacore have been taken north of 20°S, including within the EEZs of other FFA member countries.

FFA is based in Honiara, Solomon Islands, and has 17 members, (**French Polynesia** is a PIF member since September 2016 but only an observer to the FFA). Members are: Australia, Federated States of Micronesia, Fiji, Kiribati, Cook Islands, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu. FFA was established to help countries sustainably manage and develop the fishery resources that fall within their 200 mile EEZs. FFA is an advisory body providing expertise, technical assistance and other support to its members who make sovereign decisions about their tuna resources and participate in regional decision-making on tuna management through agencies such as the WCPFC and has two major programmes of relevance to the management framework under consideration:

- Fisheries management providing policy and legal frameworks for the sustainable management of tuna.
- Fisheries operations supporting monitoring, control and surveillance of fisheries as well as treaty administration, information technology and vessel registration and monitoring.

These programmes provide advice on:

- i) appropriate legal frameworks for national tuna management, including members';
- ii) obligations under various treaties and arrangements;
- iii) appropriate fisheries management frameworks including the incorporation of the principles of ecosystem-based fisheries management;



- iv) effective fisheries administration, including access arrangements, licensing of foreign and domestic fishing vessels, governance of fisheries administrations, economic implications of different management systems, and the use of new systems and technologies;
- v) development and implementation of monitoring, control and surveillance systems and effective compliance regimes including the provision of support services including a vessel regional register, VMS and observer programmes; and
- vi) the development of regional co-operation in fisheries management.

FFA also services regional fisheries treaties and arrangements and provides capacity building in the area of fisheries management. The governing body of FFA, the Forum Fisheries Committee (FFC) provides a valuable forum for the discussion of matters of common interest. FFC (and FFC sub-group) outcomes and subsequent inputs into WCPFC have been instrumental in many of the key conservation and management initiatives agreed in that forum.

Three sub-groups of FFA countries are relevant to the management of the southern albacore fishery. These are:

2.5.4.2 <u>The FFC Sub-Committee on South Pacific Tuna & Billfish (the Southern</u> <u>Committee)</u>

Membership of the Southern Committee comprises: Australia, Cook Islands, Fiji, New Zealand, PNG, Samoa, Solomon Islands, Tonga, Tokelau, Tuvalu and Vanuatu. Kiribati, New Caledonia, **French Polynesia**, American Samoa, Western Pacific Regional Fishery Management Council are permanent observers while the other FFA members are observers. The Committee makes recommendations on issues including the management of southern tunas (including albacore) and billfish to FFC for approval. Their workplan encompasses or has proposed projects which include third-party certification, MCS, management/policy, research & analytical work (*e.g.* characterisation of the longline fishery, bio-economic analyses).

A number of the FFA proposals on albacore, swordfish, striped marlin, sharks etc.,relevant to the fishery under certification, originate from the Southern Committee including proposals for a revised south Pacific albacore CMM, shark CMM and 'eastern pocket' closure.

2.5.4.3 Parties to the Nauru Agreement (PNA)

The PNA are a grouping of nations with very significant purse seine, as well as tropical longline fisheries. The Nauru Agreement is a subregional agreement on terms and conditions for tuna purse seine fishing licences in the region. The PNA are Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands and Tuvalu.

The PNA group established its own office and secretariat in 2009, through the Bikenibeu Declaration. The PNA has driven much of the management reform in the purse seine fishery, including the introduction of an input control system based on vessel day limits (the Vessel Day Scheme (VDS)). The PNA is also working on the development of a zone-based arrangement to limit longline effort based on the VDS. There are some linkages between PNA members and the albacore fishery, given the economic importance of yellowfin and bigeye to the south Pacific albacore longline fishery and the degree to which constraints on purse seine



and tropical longline fisheries for these shared species are effective. Further, some PNA states have shown some interest in developing albacore fisheries.

2.5.4.4 Secretariat of the Pacific Community (SPC)

Based in Noumea, New Caledonia, the SPC is an intergovernmental organisation that provides technical and policy advice to its members. SPC has 26 member countries and territories, 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.

The Oceanic Fisheries Programme (OFP) within the SPC Division of Fisheries, Aquaculture and Marine Ecosystems (FAME) provides French Polynesia and the other Pacific Island members of SPC with scientific information and advice necessary to rationally manage fisheries exploiting the region's resources of tuna, billfish and related species. The OFP also is, under contract, the scientific service provider to the Commission, as allowed for under Article 13 of the Convention. The OFP has three sections:

- Statistics and Monitoring: including compilation of catch and effort data, data processing and technical support for port sampling programmes and observer programmes in member countries and territories, training in fisheries statistics and database management, statistical analyses and the provision of statistical support to the WCPFC.
- Tuna Ecology and Biology: including analysis of the biological parameters and environmental processes that influence the productivity of tuna and billfish populations, focusing on age and growth, movement and behaviour as observed from classical or electronic data archiving tags, and diet in a more general study devoted to the food web of the pelagic ecosystem; and development of mathematical models to understand environmental determinants of tuna fishery production, including impacts of climate fluctuation.
- Stock Assessment and Modelling: including regional stock assessments for the WCPFC, development of tuna movement and simulation models, bioeconomic modelling, and scientific input to national tuna management plans and support for national EAFM analyses, tag-recapture database management. Confidential (to SPC and national governments) National Tuna Fisheries Status Reports are also produced.

2.5.5 French Polynesia roles and responsibilities

Table 13	. Organisations invo	olved in management	in French Pol	lynesia, their	roles and
responsi	bilties				

Organisation	Roles and responsibilities
DRMM	Fisheries data collection, fisheries management and licensing of fishing vessels.
SAM	French state service to assure at-sea security for vessel > 160 GT and all passenger vessels) via annual vessel inspection for hygiene, acquisition of crew logs for each trip, surveillance of compliance with international and high seas rules and regulations for navigation
DPAM	Is a member of the Consultative and Disciplinary Commissions for fisheries dispute resolution. It is responsible for vessel security (<i>police de la sécurité des navires</i>) and for issuing navigation permits (<i>permis de navigation</i>) for vessels less than 160 GT. It also issues vessel registration numbers (<i>immatriculation PY</i>)
QAAV (very recently changed to Directorate of Biosecurity)	The Rural Development Department split recently into a Directorate of Agriculture and a Directorate of Biosecurity. The Veterinary Inspection Service within Biosecurity inspects and certifies fishery product compliance with food safety regulations when they are exported, especially to Europe. This is the national Competent Authority.
CREOCEAN	Private consulting firm hired by DRMM to oversee the fishing vessel observer programme and the port sampling programme; coordinates placement of atsea observers
Consultative Commissions	Consultative and Disciplinary Commissions are convened by DPAM and DRMM to adjudicate over matters of granting fishing licences (for vessels or individuals) and also for instances of fisheries rules non-compliance
AEM	Under the direction of the French High Commissioner in French Polynesia this "military" entity is responsible for the surveillance of the entire EEZ, also including high seas boardings and inspections, using French Military assests
JRCC	Included within the AEM, this is the centre for coordination of at-sea rescue, aerial surveillance of fishing activities and incidences of marine pollution
Direction de l'Environnement	Directorate service under the Minister of the Environment charged with assuring the preservation and the sustainable development of natural resources. The Directorate also assumes authority over endangered, threatened and emblematic species protection. In conjunction with the DRMM they will co-manage the fishery resources. It is the marine environmental police in inshore and territorial waters.
Maritime Cluster	Local chapter of the French Maritime Cluster Organization, which is a consultative entity made up of persons or enterprises concerned with any aspect of maritime activity, obviously including fisheries

2.5.6 Monitoring control and surveillance

Monitoring, control and surveillance (MCS) is a French State/local partnership. Representing the State is the Maritime Affairs Service (SAM), and AEM and for the local French Polynesian representative it is the Directorate of Maritime Affairs (DPAM) in conjunction with the Directorate of Marine Resources (DRMM) for monitoring of fishing vessel less the 160 GT. The responsibilities have been clearly enunciated in the statutes of Organic Law (2004) of French Polynesia. Therefore, the fishing fleet is managed by local French Polynesian laws in



terms of registration etc. For the vessels in the UoC which are solely French Polynesian, it is the DRMM that is responsible. SAM is responsible for annual inspections of the vessels to ensure compliance with safe operations at sea. Under the responsibilities of the French High Commissioner in French Polynesia, through a "State Action Plan for the High Seas (AEM)" the entire EEZ and beyond is under satellite, aerial overflight and at-sea surveillance. In addition, since VMS has been obligatory on all fishing vessels, aircraft surveillance can be coordinated with VMS real-time tracking.

Under the general responsibility of the DRMM, fishery-related Consultative and Disciplinary Commissions can be convened and are always used in the event of any non-compliance with existing conditions for issuance of fishing licences. Participation in these Commissions is fairly wide-ranging and includes representatives from DRMM, the Ministry, Customs, DPAM, fisher unions (syndicates or associations), vessel owners and operators, fishing industry trade association (OP) and in the case of an infraction, the vessel owner of record. Penalties range from temporary suspension of the license, a fine or a simple warning, with conditions, *etc.*, although some non-compliance issues could go straight to the penal system. Thus, the Disciplinary Commission is simply for administrative penalties. Another Commission exists for issues related to food safety and is the responsibility of the Competent Authority (for Food Safety and Fishery Product Export) under the Veterinary Inspection Service within the Directorate of Biosecurity. This service also inspects vessels annually and audits them for food safety compliance, including crew food safety training. They can also shut down export, especially to Europe. This Commission is rarely invoked as the issue is often dealt with directly before it goes that far.

Included in the AEM within the High Commissariat is the Joint Rescue Coordination Centre (JRCC). This is the local equivalent of the French CROSS (*Centres Régionaux Opérationnels de Surveillance et de Sauvetage*) who track vessels using VMS data. As soon as an issue is discovered/reported for a vessel inside the EEZ, the information is transmitted to the JRCC for appropriate action.

2.5.7 Other Consultative entities and dissemination of fishery information

The French Maritime Cluster Organization believes in the maritime development of the Overseas Territories and on a proportionate scale, continues to initiate with local stakeholders the creation of "matching structures" that can influence their local economies and policies. The sea presents real opportunities with:

- energy resources (development hub for Marine Renewable Energy),
- biological resources (medicines, health, etc.),
- food resources (fisheries),
- commercial resources (sea route stopover and distribution centre),
- tourism resources.

Thus, the local French Polynesian Maritime Cluster currently has 33 members, with interests in various sectors of ocean-related activities such as charter vessel tourism, maritime transport, fishery products transformation, vessel construction, commercial fishing and



environmental protection (eNGOs). As the overarching mandate of the Cluster organization has already stated, the local Cluster is more focused on economic development and business promotion. The structure is however, a very useful consultative source when DRMM solicits input from the maritime sector in general (<u>www.cluster-maritime.pf</u>).

Over 25 newsletters for fishermen and the general public (*Te Ve'a Tautai* "The voice of the fisherman") were published from 1998 up to 2010. These publications contained general information, fishery statistics and fleet performance, best practices, guidelines and special issues on specific topics such as aquaculture advances in French Polynesia. These and other occassional publications come under the remit of the DRMM, which takes care of training on an *ad hoc* basis, has a consultable library open to all interested persons and not only fishers and also has an active web site (<u>www.peche.pf</u>). In addition the DRMM annually published a readily available Fisheries Statistics Bulletin.

2.5.8 Environmental management

The entire EEZ of French Polynesia (outside 12nm) is being declared as an IUCN category VI 'Protected area with sustainable use of natural resources'. The Loi de Pays n° 2016-9 LP/APF du 25 février 2016 de la loi du pays portant modification du code de l'environnement enables the creation of a new category of MPA (Aire Marine Gérée - AMG). The formal act to make the EEZ an AMG was validated by the "conseil des ministres" on 29 November 2017. The next step is to go through the Assembly. Management will be under the formalized Environmental Code, such that any plans will be promulgated not only by the Ministry of the Environment but also the Ministry of Primary Resources Development. Thus, going forward the overall management plan will include ETP and other emblematic/charismatic species and a second fisheries management plan. Under the legislative process it is the DRMM which is charged with drafting the fishery management plan. There has been some impetus to include ocean resource zoning in the plan in an effort to avoid potential gear conflict among the various user groups, but at the moment this is still under consultation. And although stakeholders are not formally (at least by statutes) required to be consulted, they certainly are, as otherwise any management plan would never be accepted. Such consultations are obviously necessary since prima facie there is no formal recognition of "indigenous people", but this recognition is tacit by the fact that "indigenous people" do "mostly" lagoon/reef and coastal fishing (traditionally) but fewer people participate in the 'high seas' longline fishery - that is, fewer only in the total number of participants, not because of any particularity in ethnic specificity. In fact it is almost impossible to discuss "indigenous people" in French Polynesia because of the enormous amount of ethnic "mixing" within the population such that separation is difficult. However, everyone is bound by the same laws. Therefore, whatever the eventual fishery management plan contains, it must include a formal provision for its regular review.

2.5.9 Subsistence fishing rights

Since there is no legal requirement to possess a fishing licence in order to fish in French Polynesia (recreational, subsistence), everyone is free to do so. However, if one wishes to sell the fruits of their labour and to also benefit from certain government assistance and subsidy programmes for the fishing sector of the economy, then a professional fishing licence is required (lagoon/reef, costal small boat, coastal pole-and-line, "coastal" longline or "high seas" longline) – i.e. all vessels in the UoA require a fishing license. And for everything other than



lagoon/reef, the Consultative Commission must be called to order to consider any issuance of licences for vessels and/or professional fisher licences. All of these elements are at present being considered for inclusion into a consolidated legislative instrument.



3 Evaluation Procedure

3.1 Harmonised Fishery Assessment

3.1.1 Overlapping fisheries

This fishery overlaps with a number of other South Pacific albacore, WCPO and EPO yellowfin fisheries in the MSC programme:

- AAFA and WFOA South Pacific albacore tuna (certified);
- Fiji Albacore and Yellowfin Tuna longline (certified)
- New Zealand albacore tuna troll (recertified);
- PNA Western and Central Pacific skipjack and yellowfin, unassociated / non FAD set, tuna purse seine (in re-assessment)
- Walker Seafood Australia albacore, yellowfin tuna and swordfish (certified);
- Solomon Islands skipjack and yellowfin tuna purse seine and pole & line (certified);
- Tri Marine Western and Central Pacific skipjack and yellowfin tuna (certified);
- SZLC, CSFC & FZLC Cook Islands EEZ South Pacific albacore & yellowfin longline (certified)
- American Samoa EEZ Albacore and Yellowfin Longline Fishery (in assessment)
- Japanese Pole and Line skipjack and albacore tuna fishery (certified).
- Northeastern Tropical Pacific Purse Seine yellowfin and skipjack tuna fishery this is the only fishery that overlaps with EPO yellowfin (certified)
- WPSTA Western and Central Pacific skipjack and yellowfin free school purse seine (in assessment)
- PT Citraraja Ampat, Sorong pole and line Skipjack and Yellowfin Tuna (in assessment)
- SZLC CSFC & FZLC FSM EEZ Longline Yellowfin and Bigeye Tuna (in assessment)

3.1.2 Principle 1

For South Pacific albacore and WCPO yellowfin, Principle 1 has been harmonised with the above fisheries following MSC's pilot harmonsation process held in April 2016, as described under Section 2.3.2; the minutes of the harmonisation meeting are provided in Appendix 2. The harmonisation outcome report was peer-reviewed, the details of which can be provided upon request. Following this process, there have been some changes - Principle 1 rationales have therefore been updated in some places, but no scores have been changed for Principle 1.

It was also agreed that the milestones for the conditions on Principle 1 should be aligned with the WCPFC CMM 2014-06 workplan. Since a revised workplan was agreed at WCPFC13, just before the site visit, the milestones have been aligned with this revised workplan (WCPFC Circular 2016/73).



In relation to EPO yellowfin, P1 scoring has been harmonised with the scoring for the Northeastern Tropical Pacific purse seine yellowfin and skipjack fishery (SCS, 2017). Note however, that different trees were used for these assessments: this fishery was conducted against the FCRv2.0 while SCS (2017) follows Annex CB of the MSC Certification Requirements v1.3. Nevertheless, scores were compared and harmonised scoring agreed for all applicable scoring issues. Any remaining differences at time of writing will be removed at the Year 1 Audit for the Mexican fishery (subject to changes in outcome between now and then).

3.1.3 Principle 2

Cumulative impacts in relation to bigeye are discussed in the evaluation table for Primary Species outcome (2.1.1 – see Appendix 1.1).

3.1.4 Principle 3

WCPFC fisheries have not so far had any conditions on P3 relating to the regional management system. In scoring this fishery, however, concerns were raised under PI 3.2.2 (decision-making processes) about WCPFC's responsiveness to declining albacore CPUEs; i.e. to what extent the decision-making processes respond to serious and other important issues.

The issue was discussed via email with the other CABs involved in WCPFC tuna assessments and it was agreed that a condition was appropriate.

3.2 **Previous assessments**

There are no previous full assessments for this fishery. A pre-assessment was completed in 2010 by Moody Marine (now Acoura).

3.3 Assessment Methodologies

This full assessment was undertaken in accordance with the MSC Fisheries Certification Requirements (FCR) version 2.0 for assessment procedure and scoring. Adjustments to the Default Assessment Tree were not required.

The MSC Full Assessment Reporting Template v2.0 was used to produce the report.

The Risk-Based Framework (RBF) was not used in this assessment.

3.4 Evaluation Processes and Techniques

3.4.1 Site Visits and consultations

The site visit took place from $16^{th} - 20^{th}$ January 2017 in Papeete, Tahiti. The full assessment team was present for the duration of the site visit. The details of individuals and organisations met are given in Table 14.



Table 14. Stakeholders consulted during and after the French Polynesia site visit (16th to 20th January 2017)

Name	Organisation	Type of consultation
Cédric PONSONNET	Assitant Director, DRMM	Provision of information during the site visit
Marie SOEHNLEN	Pelagic Fisheries Officer, DRMM	Provision of information during the site visit
Taiana RAOULX	Creocean	Provision of information during the site visit
Pascale SALAUN	French Agency for Biodiversity, Director, French Polynesia Office	Provision of information during the site visit
Philippe RAUST	MANU / Birdlife International	Provision of information during the site visit
Hinano BAGNIS	Environmental Defense Fund (EDF)	Provision of information during the site visit
Julien GUILLET	Creocean	Provision of information during the site visit
Marc TAQUET	Institut de recherche pour le développement (IRD)	Provision of information during the site visit
Arnaud LE MORVAN	FETU TEA (vessel owner)	Provision of information during the site visit
Yann CHING	Vini Vini (vessel owner)	Provision of information during the site visit
Henri BUTSCHER	Moorea Rava'ai (vessel owner)	Provision of information during the site visit
Moana MAAMAATUAHUIATAPU	SCP EDDY V (vessel owner)	Provision of information during the site visit
Georges MOARII	Lady Chris 3 & 5 (vessel owner)	Provision of information during the site visit
Torea THURET	Director, S3P	Provision of information during the site visit
Teumere. VILLIERME	Secretary, S3P	Provision of information during the site visit
Jérôme PETIT	Pew Charitable Trusts French Polynesia	Provision of information during the site visit
Donatien TANRET	Pew Charitable Trusts French Polynesia	Provision of information during the site visit
Tearii ALPHA	Ministre du Développement des ressources primaires	Courtesy closing meeting
Steve LEFOC	Ministère du Développement des ressources primaires, Directeur de Cabinet	Courtesy closing meeting
Cyril VIGNOLE	Ministère du Développement des ressources primaires, Conseiller Technique	Courtesy closing meeting



Name	Organisation	Type of consultation
Gérard SIU	Cluster Maritime French Polynesia	Provision of information during the site visit
Jo GASCOIGNE	MEC	Assessor, team leader
Charles DAXBOECK	MEC	Assessor
Chrissie SIEBEN	MEC	Assessor

The information obtained during the site visit has been incorporated throughout the main report; however key points are summarised below:

- <u>DRMM</u>: Information about the functioning and management of the fishery (operations, data gathering and analysis, management structures and responsibilities, management plans, regulations, enforcement etc.);
- <u>Creocean</u>: Information about the observer programme and bycatch and ETP species interactions;
- <u>French Agency for Biodiversity</u>: information about environmental protection and Marine Protected Areas in French Polynesia; consultation and decision-making processes; information sources for assessment
- <u>MANU / Birdlife International</u>: information on fishery's interactions with birds, background information on bird occurrence in FP, management and observer programme
- <u>Environmental Defense Fund (EDF)</u>: information on Tokelau arrangement and FP involvement therein; political landscape FP; decision-making and consultative processes; management objectives.
- <u>Institut de recherche pour le développement (IRD)</u> : FP research activities, mahi mahi bycatch and other interactions with non-target species (turtles, sharks, birds); concept of 'Rahui' in ecosystem management; consultation processes
- <u>Vessel owners</u>: details on fishing operations, gear use, bait use, bycatch avoidance tactics, ETP interactions, waste disposal, gear loss, trends in bycatch, traceability practices
- <u>S3P</u>: Port de peche activites to ensure traceability from capture to 1st point of sale. Visit to fishing port.
- <u>Pew Charitable Trusts French Polynesia</u>: information about environmental protection and Marine Protected Areas in French Polynesia (particular focus on Australes); ecosystem interactions in longline fishery; shark bycatch and concern about shark finning; consultation and decision-making processes; information sources for assessment; concern about subsidies.
- <u>Cluster Maritime French Polynesia</u>: Local chapter of the French Maritime Cluster Organization, which is a consultative entity made up of persons or enterprises concerned with any aspect of maritime activity, obviously including fisheries



3.4.2 Evaluation Techniques

a) Media announcements: MEC selected the MSC as media outlet. The MSC press release targeted a wide range of stakeholders within the sustainable seafood industry, ensuring that key stakeholders were notified of this fishery's announcement.

b) Methodology for information gathering: Review of data and documentation, interview of stakeholders.

c) Scoring process: Scoring for P1 was completed partially at the site visit. Scoring for P3 and P2 was completed during the site visit. P1 scoring was agreed by the team via email correspondence.

The scores were decided as follows:

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

Note that where there is only one scoring issue in the SG, the issue can be partially scored – in this case the team used their judgement to determine what proportion of it was met, e.g. at the 100 level, a small part met = 85, about half met = 90, nearly all met = 95.

d) Decision rule for reaching the final recommendation: The decision rule for MSC certification is as follows:

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

The aggregate score for each Principle is the sum of the weighted score of each Performance Indicator within that Principle.

e) Scoring elements: The set of scoring elements considered in the assessment is listed in Table 15.



Table 15. Scoring elements

Component	Scoring elements		Main/Minor	Data-deficient or not
Target species	UoA 1: South Pacific albacore		n/a	no
	UoA 2: WCPO yellov	wfin		
	UoA 3: EPO yellowfi	in		
Primary species	UoA 1	WCPO yellowfin, EPO yellowfin, WCPO bigeye, EPO bigeye, Japanese sardine (2 stocks), Pacific saury	main	no
		Blue marlin, striped marlin, swordfish, skipjack	minor	no
	UoA 2	SP albacore, EPO yellowfin, WCPO bigeye, EPO bigeye, Japanese sardine (2 stocks), Pacific saury	main	no
		Blue marlin, striped marlin, swordfish, skipjack	minor	no
	UoA 3	SP albacore, WCPO yellowfin, WCPO bigeye, EPO bigeye, Japanese sardine (2 stocks), Pacific saury	main	no
		Blue marlin, striped marlin, swordfish, skipjack	minor	no
Secondary species	None		main	n/a
	See Table 9		non-main	
ETP species	Sharks, marine man birds	nmals, turtles and	n/a	no
Habitats	None		n/a	n/a



4 Traceability

4.1 Eligibility Date

The Eligibility Date has been set as the date of certification. Product caught after the date of certification will be eligible to enter further chains of custody.

4.2 Traceability within the Fishery

All vessels in the UoA require a fishing licence issued by the DRMM. After hauling, the retained catch is eviscerated and demodulated following the Taniguchi method. Retained albacore or yellowfin are adults or subadults and remain recognisable at species level. Currently only one vessel in the UoA freezes its catch and also loins the fish – all others land their fish as fresh and only carry out the processing as described above. On the freezer vessel, the loined fish are then plastic wrapped and blast frozen. Each packet receives a label with year, trip number, species and EU number of the vessel, and is then put in the hold where there is segregation by species.

Each vessel completes an SPC logbook detailing the estimated volume (tonnes) and number of individuals of retained catch per species, as well as time and coordinates of the set. All vessels are equally equipped with VMS, enabling real-time monitoring of fishing activities by the DRMM.

All vessels in the UoA are domestic (FP flagged) and are therefore required to land at the local fishing port of Papeete, run by S3P who *inter alia* manages and supervises all landing operations, as well as the auction and wholesale/export facilities buildings. Offloading of foreign vessels on the other hand, occurs in sealed containers at the international port, on the other side of Papeete – none of the vessels in the UoA land there.

Sorting of fresh fish happens during landing; the fish are graded (to size), all fish are weighed and receive a label (sometimes by grade category, sometimes individually). This label also acts as 1st sales note as it links the vessel with date of landing, buyer, species and weight (see Figure 20 – note the barcode is not yet in use). At that point, a landing declaration is also completed (and is later transmitted to the DRMM). Most of the time (95 %) the fish is sold directly on the quay and passed straight to the buyer. The remaining 5 % is sold through auction. The label shown in Figure 20 accompanies the product at all times and as such ensures traceability up to the 1st point of sale.

For the freezer vessels, a tent is set up to keep the landing area cool. Big boxes are lowered into the hold and loaded individually by species. The boxes are then lifted by a crane which also weighs the product. A label is then issued showing the vessel name, date of landing, species and gross weight. All frozen landings are monitored by the veterinarian. In the case of the freezer vessels, the product changes ownership directly after weighing.

The team considered that the procedures described above, in conjunction with the French Polynesia MCS system constitutes a robust traceability management system, enabling certified product to be traced up to the point of 1st sale.



9000	130			12.2	164				
	UENTE BIRECTE	VAIPAHU	RAKA FISH		VENTE BURGETE	VAIP AHU	15 YF ANAT	NVENDU CHT	
	25/11/2016 06:33:20 SEML S3P PCS: 10	199.6 KG	T BLANC THUNNUS PRIX: A		25/11/2016 07:08:00 SEML S3P	73.3 KG	PAPA PAPA	PRIX: - TI	

Figure 20. Example of S3P labels issued at landing for the UoA vessel Vaipahu. On this occasion the fish was sold at auction to Araka Fish. Note: barcode not in use. Source: MEC



Table 16. 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	This risk is minimal – all vessels in the UoA are longliners. There is no purse seine fishery in French Polynesia.
Potential for vessels from the UoC to fish outside the UoC or in different geographical areas (on the same trips or different trips)	This risk is minimal – the vessels in the UoA have licenses to fish in the French Polynesia EEZ only. All vessels are equipped with VMS and are subject to routine real-time monitoring by the DRMM.
Potential for vessels outside of the UoC or client group fishing the same stock	Vessels from outside the UoC are likely to fish for the same stock but will not be covered by this assessment. To avoid the risk of vessels landing albacore or yellowfin from outside the UoC as MSC (i.e. vessels not associated with this assessment) an up to date list of vessels will be published with the certificate. This list can then be used by companies with MSC CoC to ensure product is originating from a vessel covered by this assessment.
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 domestic coastal fishery may also land at the local fishing port of Papeete. These are very different vessels, however, with different landing procedures, landing at different times and unloading different quantities. Labels are also not issued for product from these vessels. Given that all landings are supervised by S3P, this risk is considered minimal.
Risks of mixing between certified and non-certified catch during processing activities (at-sea and/or before subsequent Chain of Custody)	On fresh vessels, the retained catch is eviscerated and demodulated following the Taniguchi method. Retained albacore or yellowfin are adults or subadults and remain recognisable at species level, enabling their separation during sorting at landing. On freezer vessels, the loined fish are then plastic wrapped, blast frozen and then put in the hold where the albacore is separated from the other species. Note however, that each loin is identifiable to species-level as each packet receives a label with year, trip number, species and EU number of the vessel. Overall this risk was considered to be minimal.
Risks of mixing between certified and non-certified catch during transhipment	There is no at-sea or in-port transhipment in French Polynesia by domestic vessels.



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)
Any other risks of substitution between fish from the UoC (certified catch) and fish from outside this unit (non-certified catch) before subsequent Chain of Custody is required	None



4.3 Eligibility to Enter Further Chains of Custody

The assessment team have considered the risks of traceability in the fishery and have determined that product landed by vessels listed in Table 3 and originating from within the Unit of Assessment covered by this assessment (see Table 1) shall be eligible to enter into further chains of custody.

Product is eligible for landing at the domestic port of Papeete.

Further chain of custody certification will be required for certified product at the first point of sale (either directly at the point of landing or through the auction).

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

No IPI stocks were identified in this assessment.



5 Evaluation Results

5.1 Principle Level Scores

The final principal scores are provided in the table below.

Table 17. Final Principle Scores

Principle	Score UoA1 (SP ALB)	Score UoA2 (WCPO YFT)	Score UoA3 (EPO YFT)
Principle 1 – Target Species	84.1	80.8	89.1
Principle 2 – Ecosystem	86.3	86.3	86.3
Principle 3 – Management System	82.7	82.7	82.7



5.2 Summary of PI Level Scores

Principle	Component	Wt	Performance Indicator (PI)		Wt	UoA1 (SP ALB)	UoA2 (WCPO YFT)	UoA3 (EPO YFT)
One	Outcome	0.33	1.1.1	Stock status	0.5	100	90	90
			1.1.2	Stock rebuilding	0.5	N/a	N/a	N/a
	Management	0.67	1.2.1	Harvest strategy	0.25	70	70	95
			1.2.2	Harvest control rules & tools	0.25	60	60	85
			1.2.3	Information & monitoring	0.25	80	80	80
			1.2.4	Assessment of stock status	0.25	95	95	95
Two	Primary species	0.2	2.1.1	Outcome	0.33	90	90	90
			2.1.2	Management strategy	0.33	85	85	85
			2.1.3	Information/Monitoring	0.33	95	95	95
	Secondary species	0.2	2.2.1	Outcome	0.33	90	90	90
			2.2.2	Management strategy	0.33	90	90	90
			2.2.3	Information/Monitoring	0.33	95	95	95
	ETP species	0.2	2.3.1	Outcome	0.33	75	75	75
			2.3.2	Management strategy	0.33	75	75	75
			2.3.3	Information strategy	0.33	60	60	60
	Habitats	0.2	2.4.1	Outcome	0.33	100	100	100
			2.4.2	Management strategy	0.33	95	95	95
			2.4.3	Information	0.33	85	85	85
	Ecosystem	0.2	2.5.1	Outcome	0.33	80	80	80
			2.5.2	Management	0.33	85	85	85



Principle	Component	Wt	Performance Indicator (PI)		Wt	UoA1 (SP ALB)	UoA2 (WCPO YFT)	UoA3 (EPO YFT)
			2.5.3	Information	0.33	95	95	95
Three	Governance and policy	0.5	3.1.1	Legal &/or customary framework	0.33	85	85	85
			3.1.2	Consultation, roles & responsibilities	0.33	85	85	85
			3.1.3	Long term objectives	0.33	90	90	90
	Fishery specific management system	0.5	3.2.1	Fishery specific objectives	0.25	60	60	60
			3.2.2	Decision making processes	0.25	75	75	75
			3.2.3	Compliance & enforcement	0.25	100	100	100
			3.2.4	Monitoring & management performance evaluation	0.25	80	80	80



5.3 Summary of Conditions

The fishery is certified with nine conditions, as summarised in Table 18. Further detail on the conditions is provided in Appendix 1.2. The corresponding Client Action Plan is provided in Appendix 7.

Table 18. Summary of conditions

No.	Condition	Performance Indicator
1	South Pacific albacore needs a harvest strategy that is responsive to the state of the stock, with and the elements of the harvest strategy (monitoring, stock assessment, harvest control rules and management actions) working together to achieve stock management objectives.	1.2.1 (South Pacific albacore)
2	South Pacific albacore needs a harvest control rule that ensures that the exploitation rate is reduced as the PRI is approached and is expected to keep the stock fluctuating around the target level and robust to the main uncertainties. The tools used to implement the HCR should be effective in achieving the required exploitation levels.	1.2.2 (South Pacific albacore)
3	CPO yellowfin needs a harvest strategy that is responsive to the state of the stock, with and the elements of the harvest strategy (monitoring, stock assessment, harvest control rules and management actions) working together to achieve stock management objectives	1.2.1 (WCPO yellowfin)
4	WCPO yellowfin needs a harvest control rule that ensures that the exploitation rate is reduced as the PRI is approached and is expected to keep the stock fluctuating around the target level and robust to the main uncertainties. The tools used to implement the HCR should be effective in achieving the required exploitation levels.	1.2.2 (WCPO yellowfin)
5	The evidence base for determining interaction rates with ETP species, in particular seabirds and turtles, should be improved so that trends in interactions can be measured over time and so that it can be determined whether the UoA may be a threat to protection and recovery of the ETP species. Should a potential threat be identified, the fishery should demonstrate that the current ETP management strategy in place is adequate to ensure direct effects of the UoA are highly likely to not hinder recovery of ETP species.	2.3.1



No.	Condition	Performance Indicator
6	The client should provide evidence that all relevant national and regional regulations on fishery interactions with ETP species are adhered to by the UoA so that it can be demonstrated that the fishery does not hinder recovery of ETP species.	2.3.2
7	The evidence base for determining interaction rates with ETP species, in particular seabirds and turtles, should be improved so that trends in interactions can be measured over time and so that it can be determined whether the UoA may be a threat to protection and recovery of the ETP species. Should a potential threat be identified, the fishery should demonstrate that the current ETP management strategy in place is adequate to ensure direct effects of the UoA are highly likely to not hinder recovery of ETP species.	2.3.3
8	The client should ensure that short and long-term objectives, consistent with the outcomes expressed by MSC's Principles 1 and 2, are explicit within the French Polynesia management system. This may be done via the promulgation of a codified national fishery management plan, as proposed during the site visit, or by any other suitable means. The objectives should be responsive to amendments as needed to accommodate WCPFC CMMs, and take account of the general provisions of the Honolulu Convention (2000).	3.2.1
9	At the Commission level, decision-making processes should respond to important issues, and specifically to the declining catch rates of South Pacific albacore, in a transparent, timely and adaptive manner. This could be done by implementing a formal harvest strategy, as set out in CMM 2014-06 and in Condition 1, or by some other means if appropriate.	3.2.2



5.4 Recommendations

No recommendations were made by the assessment team.

5.5 Determination, Formal Conclusion and Agreement

Following consideration of all stakeholders' inputs and comments to the Public Comment Draft Report (PCDR), the fishery assessment team concluded that the fishery should be certified against the MSC standard. This determination remained a recommendation pending the completion of the formal objections process and the final certification decision by the MEC official decision making entity.

The final MEC Certification Decision was made on the 30th April 2018 with the Certification Decision Maker approving the decision to certify the fishery.



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Appendices



Appendix 1 Scoring and Rationales

Appendix 1.1 Performance Indicator Scores and Rationale

PRINCIPLE 1

1.1. SOUTH PACIFIC ALBACORE

Note: harmonised scores are presented in Appendix 2.4.

Evaluation Table for PI 1.1.1 – Stock status SP albacore

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	
а	Stock status relativ	ve 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 Recruitment estimated from the most recent stock assessment (Harley et al., 2015) is given in the first figure below – there is no evidence of any change over time. The stock assessment estimates SB at 40% of SB _{F=0} (5% grid percentile 0.32) and fishing mortality at 0.39 of F _{MSY} (95% grid percentile 0.59). An analysis using SS3, presented to SC12 (Cao et al., 2016) confirms the conclusions of the SPC assessment and estimates SB at ~55% of SB0; its estimates of recruitment (age 0) are given in the second figure below – with likewise no evidence of any trends. On this basis, the team concluded, in agreement with the pilor harmonisation process for this stock, that there is a high degree of certainty that the stock is above the point of recruitment impairment.			







		= 5 timeted SPA recruitment from the SS3 model presented to SC12 by Cao et al., 2016				
b	Stock status in rela	tion 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 stock assessment estimates stock status in relation to F_{MSY} but not SB_{MSY} specifically. Fishing mortality is below F_{MSY} (see above) and has been for the entire time series (given in figure below). For this stock, SB_{MSY} is estimated to be close to the agreed limit reference point (25%SB _{F=0} ; the LRP is 20%SB _{F=0}). The biomass has been above this level over the entire time series (see				



		above; most recent estimate 40%). Pilling et al. (2015) estimate that a biomass of 38%SB _{F=0} gives a 5% probability of the biomass falling below the LRP (under equilibrium conditions); SB _{MSY} is somewhat higher than the LRP, but likewise the most up-to-date biomass estimate is above 38%. Overall, the stock has been above a level consistent with MSY for the duration of the fishery, and there is a high degree of certainty that it is still above it – SG100 is met. Conversely, it is clear that for this fishery, SB _{MSY} is not an appropriate target (see Pilling et al., 2015). This is considered further under harvest strategy and control rules (1.2.1 and 1.2.2) below.				
		0.30 - adut 0.25 - juvenile 0.20 - juvenile 0.20 - 0.05 - 0.00 - 1960 Time series of fis in Harley et al., 2	1970 1980 Year Shing mortality on ac 015).	1990 2000 r dults (black) and	2010 juveniles (red) as estimated	by reference case model (Figure 28
Refere	ences	Harley et al., 2015	15 ; Cao et al., 2016 ; Pilling et al., 2015			
Stock Status relative to Reference Points						
Type of reference		e point		Value of reference point	Current stock status relative to reference point	
Refere relativ	ence point used in re to PRI (SIa)	scoring stock	limit reference point		20%SB _{F=0}	$SB_{current} = 40\% SB_{F=0} = 2SB_{lim}$



Reference point used in scoring stock relative to MSY (SIb)	MSY reference point	Fmsy	Fcurrent	= 0.39F _{MSY}
OVERALL PERFORMANCE INDICATOR S	100			
CONDITION NUMBER:	N/a			



Evaluation Table for PI 1.1.2 – Stock rebuilding SP albacore – Not applicable

Evaluation Table for PI 1.2.1 – Harvest strategy SP albacore

PI 1.2.1		There is a robust and precautionary harvest strategy in place				
Scoring Issue		SG 60	SG 80	SG 100		
a Harvest s		strategy design				
	Guide post	The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG80.		
	Met?	Y	Ν	Ν		
	Justifi cation	 Agreed harmonised score: 60 MSC defines a harvest strategy as 'the combination of monitoring, stock assessment, harvest control rules and management a which may include an MP or an MP (implicit) and be tested by MSE' (MSC FCR v2.0). WCPFC sets out its intention to define a formal harvest strategy for each of its key stocks, including South Pacific albacore, ir 2014-06, which has an associated workplan. Meanwhile, the elements of the WCPFC harvest strategy which are actually in plathe following: Data collection on the stock and fishery (considered in detail in PI 1.2.3 below) Stock assessment process (considered in detail in PI 1.2.4 below) Limit reference point (explicit) and target reference point (see below) Current harvest control rule (CMM 2015-02) and 'available' HCR (see 1.2.2 below) Monitoring of implementation of CMM 2015-02 via data gathering and Part 2 reports to the Commission This management strategy is reviewed annually during the Commission meeting. It is relevant to consider first of all what the objectives of the WCPFC harvest strategy are, particularly given that there are still no target reference points (despite the fact that this was scheduled to be decided in 2016 under the workplan for CMM 2014-06). Th 		harvest control rules and management actions, hocks, including South Pacific albacore, in CMM harvest strategy which are actually in place are the Commission e, particularly given that there are still no explicit hoder the workplan for CMM 2014-06). There are		



 Objectives associated with the (currently still implicit) TRP options. These would be those associated with FM assessment), MEY (see Pilling et al., 2015) and/or 45%SB_{F=0} (as proposed by FFA to WCPFC13 and intended basis for the management provisions under the Tokelau Arrangement); Objectives associated with CMM 2010-05: this is not clearly expressed in the CMM, but the explicit objective can (as per paragraph 1) no increase in the number of fishing vessels actively fishing for South Pacific albacore s current or recent historic levels. (Note: Most of the effort in this fishery is north of 20°S – see Figure 5.) 					
	The most recent biomass estimate is ~40%SB _{F=0} , which is above SB _{MSY} (see 1.1.1b), with F at 39%F _{MSY} . Hence if the target is the purely biological (i.e. MSY reference points), then it is being exceeded, by a wide margin. However, biomass is below the bio-econ reference point put forward by the FFA and the Tokelau Arrangement countries (see WCPFC13 report), and well below MEY (we current albacore prices, implies a target >>50%SB _{F=0} ; Pilling et al., 2015). Hence bio-economic targets are not being met. Further the projections in SC12-SA-WP-06 (Pilling et al., 2016b) show that if the fishery continues with current (2014) effort, the bior predicted to decline, with a 19 % probability of falling below the agreed LRP by 2033 (see Figure 8). Hence, from a purely biologic of view, the harvest strategy has not been tested as yet, but will be tested in the relatively near future. From an economic point the harvest strategy is clearly failing, but this is not within the remit of MSC (although it is considered in relation to WCPFC's drawking processes – see PI 3.2.2).				
		Fishing effort on albacore has increased considerably over the last few years, however, particularly above 20°S, where there is no CM in place. They do, however, appear to have stabilised since 2010 (when the first CMM for SPA was put in place), albeit at a relative high level compared to historical catches (<u>Table 2</u>). On this basis, it is reasonable to argue that the WCPFC harvest strategy has no been 100 % successful in stabilising the fishing impact on the stock, but it has most likely had some effect in slowing the increase fishing mortality. It is also worth noting that the longline fishery targets albacore above the size at maturity, so is impacting potent recruitment, even at high exploitation rates, less than, say, the purse seine bigeye fishery (this is the reason why estimates of SB _{MSY} a low relative to SB _{F=0}). In addition, the Tokelau Arrangement, once implemented, will provide a more clearly defined harvest strategy, least within participating EEZs. On this basis, the team felt that SG60 is met in relation to the regional harvest strategy ('expected to achieve' objectives associated w stock status), but cannot for the moment be argued to be 'responsive to the state of the stock' as required by SG80.			
b	Harvest	st strategy evaluation			
	Guide post	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	Ν	



	Justifi cation	Agreed harmonised score: 80 For the moment, SB is above the level giving a 5 % risk of falling below the agreed LRP (see 1.1.1b) and F is < <f<sub>MSY. Hence there is evidence that (for the moment) the harvest strategy is achieving its objectives; SG80 is met. Its performance has not, however, been 'fully evaluated', nor is it clear that in the long run it will be able to maintain biomass at target levels (depending on what the target is finally agreed to be). Hence SG100 is not met.</f<sub>			
С	Harvest	strategy monitoring			
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.			
	Met?	Y			
Justifi Agreed harmonised score: Met Cation All significant fisheries on SPA report catch and effort data (operational or aggregated) to SPC. CCMs are required to report a WCPFC the details of their fisheries (Part 1 reports) and compliance with the CMMs (Part 2 reports). There is monitoring in planets				o SPC. CCMs are required to report annually to rt 2 reports). There is monitoring in place.	
d	Harvest	strategy review			
	Guide post			The harvest strategy is periodically reviewed and improved as necessary.	
	Met?			Ν	
	Justifi cation	Agreed harmonised score: Not met Improvement is clearly required but none was achieved in 2016, despite the requirements of CMM 2014-06 – not met.			
е	Shark fir	k finning			
	Guide post	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	



	Justifi cation	The target species is not a shark.				
f	Review	/ of alternative measures				
	Guide post	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 biann effectiveness and measures to minim unwanted catch o are implemented,	ual review of the potential I practicality of alternative hise UoA-related mortality of f the target stock, and they as appropriate.	
	Met?	Not relevant	Not relevant	Not relevant		
	Justifi	No agreed harmonised score (harmoni	sation carried out under v1.3 which does not inclu	de this SI).		
	cation	This fishery targets SPA specifically, and there are no requirements such as minimum or maximum landing sizes or quotas which could lead to any of this catch being unwanted. Discarding rates for SPA are minimal (T. Raoulx 2017, observer programme coordinator, pers com). Hence there is no 'unwanted catch'* of albacore in this fishery. * SA3.1.6: The term 'unwanted catch' shall be interpreted by the team as the part of the catch that a fisher did not intend to catch but could not avoid, and did not want or chose not to use.				
Refere	References CMM 2014-06; CMM 2015-02; Harley et al., 2015; Pilling et al., 2015; Pilling et al., 2016a,b; WCPFC13, 2016				6	
OVER	OVERALL PERFORMANCE INDICATOR SCORE: 70					
COND		MBER:			1	



Evaluation Table for PI 1.2.2 – Harvest control rules and tools SP albacore

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 de		esign and application					
	Guide post	Generally understood HCRs are in place or available that are expected to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	Well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock fluctuating at or above a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, most of the time.			
T	Met?	Y	Ν	Ν			
	Justifi	Agreed harmonised score: 60	Agreed harmonised score: 60				
	cation	Note: See MSC advisories 'Scoring of 'avail Harvest Control Rules (HCR)' (16 Dec. 201	able' Harvest Control Rules (HCRs) in CRv 5).	1.3 fisheries' (24 Nov. 2014) and 'Interpretation on			
Harvest Control Rules (HCR)' (16 Dec. 2015). WCPFC CMM 2014-06 established a process and timetable (workplan) for the adoption of well-defined harvest control r process is underway (and the workplan milestones for 2016 were not met at WCPFC13). SG80 is not met. Following SA2.5, a HCR may be considered to be 'available' and 'expected to reduce the exploitation rate as the PRI is SG60 if i) 'stock biomass has not previously been reduced below B _{MSY} or has been maintained at that level for a recent p (SA2.5.2a) and ii) 'there is an agreement or framework in place that requires the management body to adopt HCRs befor declines below B _{MSY} ' (SA2.5.3b). The first requirement is met as described in PI 1.1.1. The second requirement is met b and associated workplan. Although the key workplan milestones for SPA for 2016 (WCPFC13) (agree acceptable levels below the LRP and agree a TRP) were not met, the reports of both SC12 and WCPFC13 show that there was a strong a them. The workplan has been revised and it has been agreed in this new workplan that a TRP will be agreed for SPA for latest'. For the moment, the assessment team (and other CABs for relevant fisheries) agreed to continue taking WCPFC place a well-defined HCR for SPA at face value – although progress will need to be verified on an annual basis. SG60 is is not met.		n of well-defined harvest control rules, but this B). SG80 is not met. The exploitation rate as the PRI is approached' at intained at that level for a recent period of time' gement body to adopt HCRs before the stock The second requirement is met by CMM 2014-06 PFC13) (agree acceptable levels of risk of falling 13 show that there was a strong attempt to meet a TRP will be agreed for SPA for by 2017 'at the agreed to continue taking WCPFC's plan to put in rified on an annual basis. SG60 is met but SG80					



b	HCRs ro	bustness to uncertainty				
	Guide post		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?		Ν	Ν		
	Justifi cationAgreed harmonised score: Not metSince a HCR is 'available' rather than 'in place', it cannot be argued to be robust to the main uncertainties. Not met.					
С	HCRs e	valuation				
	Guide post	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?	Υ	Ν	Ν		
	Justifi	Agreed harmonised score: 60				
	cation	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 F _{MSY} should usually be taken as evidence that the HCR is effective'). Taking this last point first, it is clear that F< <f<sub>MSY (see 1.1.1). A formal agreement for the development of a well-defined HCR is provided by the associated workplan (updated after WCPFC13 to reflect the failure to move forward on some of the milestones for SPA, as described above). A trigger level is provided by the agreed limit reference point (20%SB_{F=0}) which is close to SB_{MSY} and well above the PRI (see 1.1.1). The status quo projections (Pilling et al., 2016a) show that although current levels of effort are unsustainable in the long term, there remains some time for action before the stock status becomes biologically problematic (although economically it is already problematic). Pilling et al., (2015) show that fishing the stock at MSY level would require a massive increase in effort from current levels. Overall, therefore, under the MSC requirements and guidance for 'available' HCRs, SG60 is met. SG80 is not met.</f<sub>				



References	Harley et al., 2015; Pilling et al., 2015, 2016a,b; WCPFC13, 2016 and attachments; WCPFC Circular, 201 CMM 2014-06	6; SC12 summary report 2016;	
OVERALL PERFORMANCE INDICATOR SCORE: 60			
CONDITION NU	2		



Evaluation Table for PI 1.2.3 – Information and monitoring SP albacore

PI 1.2	2.3	Relevant information is collected to support the harvest strategy			
Scoring Issue		SG 60	SG 80	SG 100	
а	Range o	finformation			
	Guide post	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.	
	Met?	Y	Y	Ν	
Justifi Agreed harmonised score: 80					
	cation	tion The information used by SPC to inform the stock assessment, projections etc. (and hence support the harvest strategy) is d Section 2.3.7, and is extensive. There are some gaps in the data however; for example, for the latest stock assessment Jap fleet for the early part of the time series) refused to provide operational data; there is also uncertainty around growth rates, in the assessment between the troll length-frequency data and the CPUE data. SG80 is met but SG100 is not met.			
b	Monitorir	ng			
	Guide post	Stock abundance and UoA removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.	
	Met?	Y	Y	Ν	
Justifi Agreed harmonised score: 80 cation The 'available' harvest control rule requires estimates of fishing mortality and biomass available information allows the stock assessment to provide this, along with estimates of the stock assessment to provide the stock assessment assessment to provide the stock assessment to			equires estimates of fishing mortality and bion assessment to provide this, along with estimation	hass in relation to reference points; notably $SB_{F=0}$ – ates of confidence intervals and sensitive to various	



parameter values and assumptions (Harley et al., 2015). The existing management regulation (CMM 2015-02) requires estimates of vessel activity targeting albacore south of 20°S, which is provided by all CCMs in their Part 1 and Part 2 reports; these also provide estimates of catch. Most CCMs (with some exception – see scoring issue a) provide operational data to SPC to support stock assessments. DRMM provide fishery landings, effort and discard data from observers at an operational level.

On this basis, SG80 is met. SG100 is not met, because there remain uncertainties as set out under scoring issue a.

c Comprehensiveness of information

L L	Comple					
	Guide post		There is good information on all other fishery removals from the stock.			
	Met?		Y			
	Justifi	Agreed harmonised score: 80				
	cation	As noted above, all CCMs provide ca WCPFC, there are various projects comprehensive. Met.	tch and effort information. Although some have underway to support them (see Williams, 2	e continuing challen 2013). Overall, the	ges as regards data provision to data on this fishery are quite	
Refere	ences	Harley et al., 2015; Williams, 2013; D	RMM, 2016; CMM 2015-02			
OVER	OVERALL PERFORMANCE INDICATOR SCORE: 80					
COND	CONDITION NUMBER (if relevant): N/a					



Evaluation Table for PI 1.2.4 – Assessment of stock status SP albacore

PI 1.2	2.4	There is an adequate assessment of the stock status			
Scoring Issue		SG 60	SG 80	SG 100	
а	Appropri	ateness of assessment to stock under	consideration		
	Guide post		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.	
	Met?		Y	Y	
	Justifi	Agreed harmonised score: 100			
	cation MULTIFAN-CL is able to take into account features of the fisheries and the biology of the stock. Fisheries data are divider 'fisheries' with similar catchability and selectivity characteristics – in this case, they are divided by region and gear types. The integrates length, age and tagging data. SG100 is met.		of the stock. Fisheries data are divided into individual are divided by region and gear types. The model also		
b	Assessm	nent approach			
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.		
	Met?	Y	Y		
	Justifi	Agreed harmonised score: 80			
	cation The most recent stock assessment (Harley et al., 2015) estimates stock status (SB and F) in relation to a range of reference points incl MSY reference points and relative to unfished status (F=0) – see details in 1.1.1. SG80 is met.			nd F) in relation to a range of reference points including G80 is met.	
c Uncertainty in the assessment					
	Guide post	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	
	Justifi cationAgreed harmonised score: 100The stock assessment considers uncertainties in two ways: incorporating uncertainty in parameter values directly (stochastic analysis) and quoting grid medians and 5% and 95% percentiles; and via sensitivity analyses which consider directly the impact of changes in parameter values (e.g. weightings of different datasets, higher and lower M and h). Probabilities can be inferred from these results, and are also estimated explicitly elsewhere (e.g. in stochastic projections derived from the stock assessment; Pilling et al., 2016a).				
d	Evaluatio	ation of assessment			
	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.	
	Met?			Y	
	Justifi cation	 The pilot harmonisation concluded as Consensus that the key issue is that would align with the other stocks (N participants were not familiar with the upcoming NZ re-assessment may dee The New Zealand assessment conclu SPC continually reviews assessment iteration (subject to funding and the between the most recent assessment biological or fisheries data, assess comments on the assessment and 	a follows (Appendix 2.4): assessment conclusions and management ac NPA, SKJ, YFT). The group was not comple e stock assessment in detail. 100 was provision cide differently. uded that SG100 is met. This assessment team nent assumptions and approaches and alternativ me constraints), with assessments modified as nent and the previous one). vity analyses exploring the impact of various as sment approaches used for other stocks or by d conclusions.	dvice is robust – all in the 'green zone'. Score of 100 tely comfortable with assigning a score since most hally agreed but consensus that the P1 expert for the in concurs on the basis that: we hypotheses are explored at each stock assessment required (see Section 2.3.7 for a summary of changes sumptions and treatments of the data, in line with new other RFMOs or peer review and scientific committee	
е	Peer rev	eview of assessment			
	Guide post		The assessment of stock status is subject to peer review.	The assessment has been internally and externally peer reviewed.	
	Met?		Y	Ν	



	Justifi cation	Agreed harmonised score: 80				
		The stock assessment is reviewed by the Scientific Committee – this is considered internal peer review of some WCPFC/SPC stock assessments (e.g. bigeye; Lanelli et al., 2012), from which the cond all the main WCPFC stocks, including SPA. SG80 is met. Since there has not been a formal external explicitly, SG100 was not considered to be met by the harmonisation group.	ew. There has been external peer clusions have been applied across al peer review of this assessment			
References Harley et al., 2015; Pilling et al., 2016a,b; Lanelli et al., 2012; SC11, 2015; SC12, 2016						
OVERALL PERFORMANCE INDICATOR SCORE: 95						
CONDITION NUMBER: N/a			N/a			



1.2. WESTERN CENTRAL PACIFIC YELLOWFIN

Note: harmonised scores are presented in Appendix 2.3.

Evaluation Table for PI 1.1.1 – Stock status WCPO yellowfin

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	
а	Stock sta	atus relative to recruitment impairment			
	Guide post	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	
	Justifi	Agreed harmonised score: 100			
	cation	Estimates of biomass and fishing mortality in relation to reference points are given in Table 4 of the main report. According to the stock assessment, there have been no particular trends in recruitment for WCPO yellowfin throughout the assessment period (see figure below), although the overall average of estimated recruitment since 1990 average is ~6% lower than the long-term mean (but this is most likely within the range of uncertainty in the estimates). Current spawner biomass in the absence of fishing (SB _{F=0}) is 4% lower than SB ₀ , likewise indicating slightly lower recent recruitment than the overall average of the assessment period, but again, most likely with no statistical difference.			





Estimate of recruitment from 1960 to 2011 for the whole WCPO region (millions), with 95% confidence intervals, from Davies et al., 2014.

According to the 2014 stock assessment, SB_{current} and SB₂₀₁₂ have a probability of being above the MSY level of ~95%, and short-term projections suggest that SB₂₀₁₆ is likely to be higher. In addition, none of the sensitivity analyses (at least singly) resulted in a median estimate of SB_{current} which was below SB_{MSY} (lowest estimated of SB_{current}/SB_{MSY} = 1.16 – see table).

Feature	Sensitivity analysis	MSY reference points
		SB _{curr} /SB _{MSY}
Natural mortality	Estimated by the model rather that fixed	1.55
Steepness	Steepness = 0.95	1.68
Ref. case model		1.37
Standardised CPUE indices	Include Philippines handline fishery index, which apparently conflicts with others in Region 7	1.37
Tag mixing	Reduce the tag mixing period to one quarter	1.37
Relative weighting of size data	Down-weighted relative to ref. case	1.34
Steepness	Steepness = 0.65	1.16

Outcome of sensitivity analysis for SB_{current} relative to SB_{MSY}, for yellowfin stock assessment:



		In summary, the team considered the follow	ing:			
		 There is a probability of ~~95 % that spaw 	ner biomass is above the level giving MSY.			
		• Current fishing mortality is estimated to be below the MSY level; catches are approximately at the MSY level (noting, however, that confidence intervals in these estimates are quite wide).				
		 Estimates of recruitment from the stock as 	sessment model suggest that it has been fl	uctuating without trend.		
		• The assessment report was welcomed by some suggestions, did not find anything	members of the WCFPC scientific committe significant to criticise the approach taken by	e (see report SC10 pp.38-41) who, despite making y SPC.		
		On this basis, the team concluded that there is a high degree of certainty that the stock is above the point at which recruitment woul impaired, since the MSC definition of 'a high degree of certainty' is 95 % confidence.				
b	Stock sta	ock status in relation to achievement of MSY				
	Guide post		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	Ν		
	Justifi cation	Agreed harmonised score: 80 The most recent stock assessment estimated that SB is above SB _{MSY} with almost but not quite 95 % probability (SB _{current} /SB _{MSY} 5 % confidence intervals 0.97-1.82, B _{current} /B _{MSY} 5 % confidence intervals 1.00-1.69). F _{current} /F _{MSY} is estimated to be 0.72 (0.51-1.09). Short-term projections estimated F ₂₀₁₆ /F _{MSY} at ~0.8. In terms of trends 'over recent years' (SG100) – these are shown (as estimated by the stock assessment) in the figure below.				







Reference point used in scoring stock relative to MSY (SIb)	20%SBcurrent,F=0	398,100 t (median estimate) 473,700 t (ref. model)	SB _{current} /SB SB _{current} /(0.	B _{MSY} = 1.37, 1.37 2SB _{current,f=0}) = 2.05, 2.1
OVERALL PERFORMANCE INDICATOR S	90			
CONDITION NUMBER:	N/a			



Evaluation Table for PI 1.1.2 – Stock rebuilding WCPO yellowfin – not applicable

Evaluation Table for PI 1.2.1 – Harvest strategy WCPO yellowfin

PI 1.2.1		There is a robust and precautionary harvest strategy in place			
Scoring Issue		SG 60	SG 80	SG 100	
a Harvest st		strategy design			
	Guide post	The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG80.	
Met?		Y	Ν	Ν	
	Justifi	Agreed harmonised score: 60			
	cation	MSC defines a harvest strategy as 'the which may include an MP or an MP (im	e combination of monitoring, stock assessment, h pplicit) and be tested by MSE' (MSC FCR v2.0).	narvest control rules and management actions,	
		The stated objective of the WCPFC ha maintain the stock at the MSY level.	rvest strategy (as defined in the target reference p	oint given in CMMs 2015-01 and 2016-01) is to	
		CMM 2014-06 commits WCPFC to dev for yellowfin have yet been met, howev of the WCPFC harvest strategy are the	veloping a formal harvest strategy for yellowfin an ver (see 2014-06 workplan and summary report fr e following:	d the other key stocks; none of the milestones om WCPFC13). For the moment, the elements	
		• Data collection on the stock and fishe	ery (considered in detail in PI 1.2.3 below)		
		Stock assessment process (consider	ed in detail in PI 1.2.4 below)		
		Limit reference point (explicit) and tar	get reference point (provisional – from CMM 2015	5-01 and 2016-01) (F _{MSY})	
		Current harvest control rule (CMM 20	16-01) and 'available' HCR (see 1.2.2)		
		Monitoring of implementation of CMM 2015/2016-01 via data gathering and Part 1 and 2 reports to the Commission			
		This management strategy is reviewed	annually during the Commission meeting.		
		Given that the stock status of WCPO strategy for yellowfin has not been tes	yellowfin is healthy, as it has been since stock as ited. The most recent stock assessment suggests	ssessments started, the efficacy of the harvest that catches are approximately at MSY level,	



		such that in the long run, this level of target biomass (via F_{MSY} as set out in C	fishing mortality would result in biomass declining CMMs 2015-01 and 2016-01).	g to ~MSY levels, which is the current (implicit)
		Fishing effort on yellowfin has increase just over 500,000 t. Overall, the fishery with ~95% confidence, although it is no the team felt that SG60 is met.	ed more or less continuously over the last few de y is achieving stock management objectives (refer of clear how much the harvest strategy implemente	ecades. Since 2000, catches have stabilised at rence points), since F is estimated to be $ ed by WCPFC has to do with this. On this basis,$
		It is impossible to evaluate in detail wh CMM 2014-06 provides for the develop place in order to be confident of mainta 2014-06 workplan has been disappoint	at WCPFC might do in the future, should yellowfin pment of a harvest strategy, but is somewhat vag ining stock biomass at the target level; progress b ting (see WCPFC13 summary report).	n stock status decline to target levels or below. gue on the management measures to be put in by WCPFC to date on the implementation of the
		PNA harvest strategy:		
	PNA operate a vessel day scheme (VDS) which limits effort by setting an overall 'TAE' (total allowable effort) which is divided up f of the parties to the agreement. The TAE is set annually based on objectives of 'optimal exploitation' as well as WCPFC provisions presumably means MSY) – the focus of the scheme is, however, skipjack rather than yellowfin. For skipjack, fishing effort in a suggested as a proxy reference point for 50%SB _{F=0} (VDSTSC3 Working Paper 1a), but this reference point is not apparently ap yellowfin. Nevertheless, the document shows that the stock status of yellowfin is taken into account in setting the TAE. The PNA strategy applies to ~half the total catch of the stock.			
		Overall scoring:		
		Overall, given the following points, the	team considered that SG60 is met:	
		• The stock status is good, and status	quo projections suggest that it will remain above th	he MSY level (Pilling et al. 2016c)
		• A combination of WCPFC and PNA h	narvest strategies are able to limit effort to an appr	opriate level
		• WCPFC and PNA are able to be at le	east somewhat responsive to the status of the store	cks (cf bigeye)
		• A HCR can be argued to be 'available	e' – see 1.2.2.	
	The team concluded, however, that SG80 is not met, because the harvest strategy is insufficiently responsive to the status of the sto The team were not confident based on past or current form that, should yellowfin stock status be revealed at the next stock assessment to be approaching or below target levels, WCPFC and/or PNA would be able to stabilize or decrease fishing mortality in a fully effect and timely way under the existing harvest strategy.			sufficiently responsive to the status of the stock. tatus be revealed at the next stock assessment or decrease fishing mortality in a fully effective
b	Harvest	strategy evaluation		
	Guide post	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	Not evaluated		
	Justifi Agreed harmonised score: 80					
	cation	As noted above, the current estimates and status quo projections of stock status provide evidence that the harvest strategy is working; despite uncertainties, the projections suggest a probability of the stock falling below the limit reference point, or F increasing above F _{MSY} by 2032 of <1%. SG80 is met. Since SG80a is not met, SG100b was not evaluated at the harmonisation meeting as this would not impact on scoring.				
с	Harvest	strategy monitoring				
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.				
	Met?	Y				
	Justifi cation	Agreed harmonised score: 60 met Monitoring of the fishery for the purposes of stock assessment is considered in PI 1.2.3 below, and the analysis of data is considered under PI 1.2.4. Monitoring of the implementation of the harvest strategy (notably CMM 2015/2016-01) is carried out via self-assessment by CCMs, included in their Part 1 and 2 reports submitted to WCPFC annually. For French Polynesia, DRMM monitors the fishery via logsheets, observer reports and VMS. Met.				
d	Harvest	strategy review				
	Guide post			The harvest strategy is periodically reviewed and improved as necessary.		
	Met?			Not evaluated		
	Justifi cation	Since SG80a is not met, this has no impact on the scoring.				
	Shark finning					



e	Guide post	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 de finning is not takin	gree of certainty that shark g place.
	Met?	Not relevant	Not relevant	Not relevant	
	Justifi cation	The target species is not a shark.			
f	Review	of alternative measures			
	Guide post	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.	e potentialThere is a biannual review of the potalternativeeffectiveness and practicality of alternted mortality ofmeasures to minimise UoA-related mock and theyof unwanted catch of the target stocke.they are implemented, as appropriate	
	Met? Not relevant Not relevant Not relevant		Not relevant		
	Justifi	No agreed harmonised score (harmoni	sation carried out under v1.3 which does not inclu	de this SI).	
	cation	cation This fishery targets yellowfin specifically, and there are no requirements such as minimum or maximum landing sizes or quotas w could lead to any of this catch being unwanted. Discarding rates for yellowfin are minimal, according to observer data. Hence there i 'unwanted catch'* of yellowfin in this fishery.			nding sizes or quotas which rver data. Hence there is no
		* SA3.1.6: The term 'unwanted catch' shall be interpreted by the team as the part of the catch that a fisher did not intend to catch but could not avoid, and did not want or chose not to use.			
Refere	References CMM 2015-01 and 2016-01; Davies et al., 2014; Pilling et al., 2016c; VDSTSC3 Working Paper 1a; observer reports				r reports
OVER	OVERALL PERFORMANCE INDICATOR SCORE: 70				70
COND	CONDITION NUMBER: 3				3



Evaluation Table for PI 1.2.2 – Harvest control rules and tools WCPO yellowfin

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place						
Scoring Issue		SG 60		SG 80	SG 100			
а	HCRs de	design and application						
	Guide post	Generally understood HCRs are in place or available that are expected to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.		Well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock fluctuating at or above a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, most of the time.			
	Met?	Y		Ν	Ν			
	Justifi	Agreed harmonised score: 60						
	cation	SA2.5.2	 i.2 In scoring issue (a) at the SG60 level, teams shall accept 'available' HCRs (instead of HCRs that are 'in place') in cases where: a. 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 BMSY within the next 5 years; or b. In UoAs where BMSY estimates are not available, the stock has been maintained to date by the measures in use at levels that have not declined significantly over time, nor shown any evidence of recruitment impairment. 					
		SA2.5.3	 SA2.5.3 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 is in place that requires the management body to adopt HCRs before the stock declines below BMSY. 					



		Stock biomass has been above the estimated MSY level throughout the time series, and since the probabilities that B <b<sub>MSY and F>F_{MSY} are low, it is not likely that the stock biomass will fall below this level in the next five years (see PI 1.1.1; Section 2.3.12; <u>Table 6</u>). WCPFC have an agreed, legally-binding framework in place to establish place formal harvest strategies and control rules for their main stocks including WCPO yellowfin (see CMM 2014-06 and associated workplans; Section 2.3.15). The requirements of SA2.5.2-3 are therefore met for a HCR to be 'available'. SG60 is met. Since the harvest strategy is not 'in place', SG80 is not met.</b<sub>						
b	HCRs ro	CRs robustness to uncertainty						
	Guide post		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.				
Ĩ	Met?		Ν	Ν				
	Justifi cation	Agreed harmonised score: Not met Since a HCR is 'available' rather than 'in place', it cannot be argued to be robust to the main uncertainties. Not met.						
с	HCRs ev	Rs evaluation						
	Guide post	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	Ν	Ν				
	Justifi cation	Agreed harmonised score: 60 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 F _{MSY} should usually be taken as evidence that the HCR is effective'). Taking this last point first, it is clear that F <f<sub>MSY (see 1.1.1). A formal agreement for the development of a well-defined HCR is provided by the associated workplan (updated after WCPFC13 to reflect the failure to move forward on some of the milestones). A trigger level is provided by the agreed limit reference point (20%SB_{F=0}) and the provisional target reference</f<sub>						



	point (F _{MSY}). The most recent assessment as well as the status quo projections provide some evidence that the tools in use are sufficiently effective at controlling exploitation rates. Overall, therefore, under the MSC requirements and guidance for 'available' HCRs, SG60 is met. SG80 is not met.					
References	CMMs 2014-06, 2015-01 and 2016-01; Davies et al., 2014; Pilling et al., 2014; 2016c; VDSTSC3 Working Paper 1a (see http://www.pnatuna.com/VDS)					
OVERALL PERFORMANCE INDICATOR SCORE: 60						
CONDITIO	4					


Evaluation Table for PI 1.2.3 – Information and monitoring WCPO yellowfin

PI 1.2.3		Relevant information is collected to support the harvest strategy			
Scoring Issue		SG 60	SG 80	SG 100	
а	Range o	finformation			
	Guide post	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.	
	Met?	Y	Y	Ν	
Met? Y N Justifi cation Agreed harmonised score: 80 The following information is available, and is used as part of the harvest strategy – notably to inform 1. Fishery-dependent information Catch, effort and CPUE: It is a requirement for all CCM fisheries to provide catch and effort data to W raised to best estimates of total catch by SPC-OFP, to account for missing data. CPUE data are star al. (2014). Data go back to 1960, although as expected, historical data are sparser and generally les is often not clear what the relevant factors are for effective catch rate standardization, and they may this is a particular problem for purse seine data. Length-frequency data: Length-frequency data comes from various port sampling programmes and back to 1962. These data are weighted in the stock assessment according to spatial representation, i frequency by geographic region. Fleet composition: Each CCM provides information to WCPFC annually on their active fleet, in their I 2. Fishery-independent information Size and age data: Data on age and growth are available to inform the stock assessment, althou uncertain. Natural mortality: Estimating natural mortality is always a big problem; however there are sufficient ta allow the stock assessment model to estimate natural mortality, although the outcome was somew		notably to inform the stock assessment model: d effort data to WCPFC/SPC. The logsheet data are PUE data are standardised as described in Davies et and generally less reliable than more recent data. It on, and they may not be recorded in the logbooks – programmes and some observer reports, and goes I representation, to account for differences in length- ive fleet, in their Part 1 reports. sessment, although growth rates remain somewhat e are sufficient tagging data available for yellowfin to ome was somewhat different to the reference case			



		Environmental data: The Ocean Fisheries Programme of SPC has undertaken environmental research as part of their ecosystem monitoring programme, focusing particularly on potential environmental drivers of tuna population dynamics.			
		3. Information inferred from the stock assessment			
		A significant range of information relates of stock abundance, fisher	ating to stock status comes as the output of th y impact etc.	e stock assessment (Davies et al., 2014), including	
		4. Data gaps			
		Stock structure - the WCPO yellowfin structure is emerging for the tropical and information about discards) is low	fishery is assessed and managed as a single s tunas (e.g. Kolody et al., 2013). Observer cove v, particularly for the longline fishery and partic	stock. However, suggestive evidence for population arage (providing external verification of logbook data ularly on the high seas.	
		Overall, given the size and complexity of the fishery, the range and comprehensiveness of the data available is impressive and improvi all the time. Nonetheless, some data gaps do constrain stock assessments – as does bias and lack of precision in some of the datase particularly for historical data. Perhaps more importantly, the stock assessment continues to rely on commercial CPUE as an index stock abundance, and although these data are carefully analysed and standardised as far as possible, there are no fishery-independent datasets with which they can be compared, while issues such as spatial and temporal changes in catchability remain problematic. (this basis, the team concluded that SG80 is met, but SG100 is not met.			
b	Monitori	ng			
	Guide post	Stock abundance and UoA removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.	
	Met?	Y	Y	Ν	
Justifi Agreed harmonised score: 80					
	cation	Fishery removals are monitored by individual CCMs via logsheets and port sampling, and are required to be submitted to the Commission annually, in the form of estimates of total catch plus catch and effort data broken down by gear and either aggregated (5° squares by month) or (preferably) at operational level (individual logsheets). Despite some gaps in this dataset noted above, coverage is good overall. This catch, effort and CPUE dataset is the key indicator for stock assessment. Other key fisheries data which support management are length-frequency data (collected via port sampling and observer programmes) and tag returns. Port sampling coverage is high, but observer coverage is low, particularly for longline fisheries. Biological data are also collected via research programmes.			



COND	ITION NU	MBER:			N/a	
OVER	ALL PER	FORMANCE INDICATOR SCORE:			80	
Refere	nces	Harley et al., 2015; Williams, 2013; I	0RMM, 2016; CMM 2015-02; Pilling et al., 2016	c; Kolody et al., 201	13	
	Justifi cation	Agreed harmonised score: 80 The stock assessment covers all fis Indonesia and some smaller coasta Secretariat and SPC are working to s	shery removals from the stock, and despite so I fleets), overall the data coverage is quite co support and develop data collection systems (se	ome data gaps (no mprehensive. Whe ee information in Wi	tably Vietnam, also Philippines, re data gaps exist, the WCPFC illiams, 2013).	
	Met?		Y			
Ĩ	Guide post		There is good information on all other fishery removals from the stock.			
c	Compreh	nensiveness of information				
		 Although the frequency of sto annually); it is not complete progress. 	ock assessments is reasonable, they are not carr y clear how robust the management is to unce	ied out with 'high fre ertainty – the mana	equency' (i.e. not always updated gement system is still a work in	
		Frecision Historical data are often lack	ing in precision			
		The requirement to 'raise' lo	gsheet data by estimates of total catch (to acc	ount for missing lo	gsheets) results in some loss of	
		 Some key fleets provide only the most recent yellowfin as: 	aggregated data or do not permit operational d sessment)	ata to be used in st	ock assessments (e.g. Japan for	
		 Some data gaps remain in fi 	shery-dependent data (see above)	.g		
		Purse seine catch and length	-frequency data can be biased by grab-samplir	na techniques used	to estimate species composition	
	The characteristics of tuna longline CPUE are often poorly understood and it is unclear how successful most effort standardization analyses are or how to properly represent the uncertainties.					
		On this basis, the team felt that SG8	0 was met. SG100 is not met, for the following r	easons:		
		Formal stock assessments have tak information on trends in fishery indic et al., 2016c).	ormal stock assessments have taken place every few years (2011, 2014). In between formal stock assessments, SPC provide some formation on trends in fishery indicators (total catch, nominal CPUE, catch at length and at weight), to guide management (e.g. Pilling al., 2016c).			

Evaluation Table for PI 1.2.4 – Assessment of stock status WCPO yellowfin



PI 1.2.4		There is an adequate assessment of the stock status				
Scoring Issue		SG 60	SG 80 SG 100			
а	Appropriateness of assessment to stock under consideration					
	Guide post		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.		
	Met?		Y	Y		
	Justifi	Agreed harmonised score: 100				
	cation	The stock assessment is summarised sophisticated, and takes into account and region, maturity and fecundity at In relation to SG100, the assessment structuring of the stock and movement of sex-specific growth and natural movement The stock assessment also takes into standardise CPUE time series to refer	ised in the main report. The model, which has been developed for the stock assessment, is complex a ount the biology of the species (e.g. by incorporating the results of research into age and growth by s <i>i</i> at size and age etc.). SG80 is met. sment takes into account major features of the biology of yellowfin, including growth curves, spat ment patterns. One remaining issue is that MULTIFAN cannot be structured by sex, to take into account I mortality curves, but this is a research direction of the MULTIFAN development team at the mome into account the nature of the fishery, in as much as considerable research effort has gone into trying reflect operational changes in each fishery. Overall, the team considered that SG100 is met.			
b	Assessm	ssessment approach				
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.			
	Met?	Y	Y			
Justifi Agreed harmonised score: 80 cation The stock assessment estimates various reference points including those related to MSY and those related to the conclusions of the stock assessment in relation to reference points is given in the rationale for PI 1.1.1 above. SG8			MSY and those related to the unfished biomass. The tionale for PI 1.1.1 above. SG80 is met.			
	Uncertainty in the assessment					



C	Guide post	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		
	Justifi	Agreed harmonised score: 100				
	cation	The stock assessment attempts to r CPUE standardisation using GLM). It for various different model options (ta statistical framework to estimate state the best (Maximum Posterior Densi assessment emphasizes the uncertal parameter estimation uncertainty esti do not have the classical probabilistic uncertainty than classical approaches	duce uncertainties and biases in input datasets (e.g. via stratification in space and time, and via also includes a detailed exploration of uncertainties in the model assumptions, via sensitivity analyses g mixing, natural mortality, steepness, different treatment of the CPUE dataset). The model uses a s and parameters conditional on a suite of structural assumptions and the data. The model outputs y) point estimates, along with estimates of uncertainty for desired parameters. The most recent nty in point estimates conditional on a broad range of alternative fixed assumptions, rather than the nated conditional on individual models. As a consequence, the probabilistic stock status statements interpretation, but are actually expected to provide a broader and more realistic representation of			
d	Evaluatio	on of assessment				
	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.		
	Met?			Y		
	Justifi cation	Agreed harmonised score: 100 Exploration of alternative hypotheses via sensitivity analyses is considered above. The stock assessment has been updated progressively: structural changes in the most recent assessment (Davies et al., 2014) include the following: Increase in the number of spatial regions to improve modelling of tagging and size data Catch estimates included from Vietnam and some Japanese coastal longline data More operational data used Improved modelling of recruitment A large amount of new tagging data added, corrected for post-release dynamics Davies et al. (2014) made an impressive effort to evaluate a range of structural assumptions, and the results demonstrated that the key				
		stock status conclusions are very rot	oust to this range of assumptions (and their int	eractions). In such a large and complex fishery, it is		



		inevitable that unresolved issues will remain (e.g. conflicts between datasets, sensitivity to intractable issues such as estimates of natural mortality and steepness etc.), and these issues remain a priority for consideration in future work. Overall, the team concluded that as issues arise in the assessment, the stock assessment explores and deals with them, and while the assessment is not perfect, nor probably ever will be, the exploration of alternative hypotheses and assumptions has been rigorous. SG100 is met.			
е	Peer revi	iew of assessment	ew of assessment		
	Guide post		The assessment of stock status is subject to peer review.	The assessmen externally peer re	t has been internally and eviewed.
	Met?		Y	Ν	
	Justifi	Agreed harmonised score: 80			
	cation	The stock assessment is internally peer reviewed within the WCPFC system (by the Scientific Committee). A process of formal external peer review has been started and applied to some WCPFC stock assessments (e.g. bigeye) but not so far this one specifically. Althout the results of the bigeye review have been applied by SPC more generally across the whole set of recent tuna stock assessments (s WCPFC-SC10-2014/SA-WP-02), the harmonisation meeting concluded, and this assessment team agreed, that this does not constit formal external peer review of this assessment specifically. SG80 is met but SG100 is not met.			ttee). A process of formal external of ar this one specifically. Although cent tuna stock assessments (see greed, that this does not constitute
Refere	ferences Davies et al., 2014 ; SC10 report, 2014				
OVER	OVERALL PERFORMANCE INDICATOR SCORE: 95				95
COND	ITION NU	MBER:			N/a



1.3. EASTERN PACIFIC YELLOWFIN

Evaluation Table for PI 1.1.1 – Stock status EPO yellowfin

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	
а	Stock sta	atus relative to recruitment impairment			
	Guide post	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	
	Justifi	PRI taken to be 2*SB _{lim} = 20%SB ₀ = 0.56SE	B _{MSY} (see Section 2.3.17).		
cation Recruitment has seen several regime shifts not apparently related to fishing pressure (since of the time series) – it has been in a 'medium' regime but recruitment in 2015 and 2016 a time since 2006 (see Figure 10). Biomass fluctuates according to the regime as well, and her points across the whole time series may not be valid (but for the moment this is how it is due to this is ~95% of SB _{MSY} under the base case model. Under the alternative scenario (h=0.75 – see Section 2.3.18), SB/2*SB _{lim} = 0.8; i.e. under			ince the lowest productivity regime was at the start 16 are estimated to be above average for the first I hence estimating a single value for MSY reference is done). -Vera et al., 2016) estimates SB ₂₀₁₅ /2*SB _{lim} = 1.7; der this alternative scenario, biomass is estimated		
	to be below this estimate of the PRI. The stock assessment notes, however, that evidence for a stock-recruit relationship 'probably an artefact of the apparent regime shifts' (Minte-Vera et al., 2016; p.5); reportedly (according to information p harmonisation), the h=0.75 scenario was selected on the basis of extreme precaution rather than as a realistic alternati Based on this analysis, and reviewing the trends in recruitment as shown in <u>Figure 10</u> , the team concluded that overall degree of certainty that the stock is above the PRI (SG100 is met).			dence for a stock-recruit relationship is 'weak' and portedly (according to information provided during n rather than as a realistic alternative hypothesis. <u>0</u> , the team concluded that overall there is a high	
b	Stock sta	tatus in relation to achievement of MSY			
	Guide post		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	Ν	
	Justifi cation	The base case model (updated in 2017) estimates SB ₂₀₁₆ at ~86 % of SB _{MSY} , and B2016 at ~130 % of B _{MSY} . It predicts that SB will recover to above the MSY level in 2018 with high probability (>95% according to the projection confidence intervals) because of recent high			



	recruitment. SB has been fluctuating around the level of SB _{MSY} for several years according to the updated assessment (see <u>Figure 11</u>). Sensitivity analyses (full set run in 2016) give a wide range of values for SB/SB _{MSY} from 0.56-1.3. The stock has therefore been fluctuating around a level consistent with MSY, but not with a high degree of certainty (based on the sensitivity runs) and not above this level in recent years. S80 is met but SG100 is not met.				
References	erences Minte-Vera et al., 2016 and 2017				
Stock Status re	Stock Status relative to Reference Points				
	Type of reference point	Value of reference point	Current stock status relative to refe	erence point	
Reference	Blim	SB0.5R0; 0.28SBMSY; 0.1SB0	3.39		
point used in scoring stock relative to PRI (Sla)	2*Blim	2 x the above	1.70		
Reference point used in scoring stock relative to MSY (SIb)	SB _{MSY}	3,528 t; 0.27SB₀	0.95		
OVERALL PER	OVERALL PERFORMANCE INDICATOR SCORE: 90				
CONDITION NU	CONDITION NUMBER (if relevant):				



Evaluation Table for PI 1.2.1 – Harvest strategy EPO yellowfin

PI 1.2.1		There is a robust and precautionary harvest strategy in place			
Scoring Issue		SG 60	SG 80	SG 100	
а	Harvest	strategy design			
	Guide post	The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG80.	
	Met?	Y	Y	Y	
	Justifi	The harvest strategy is made up of the	following elements (see Section 2.3.21):		
	cation	Harvest control rule: Resolutio	n C-16-02		
	Management actions: Resolution C-17-01				
		 Monitoring and evaluation: (Restock assessments, e.g. Minter 	es. C-17-01 requires IATTC scientists to evaluate -Vera et al., 2016)	the impact on stocks during 2018; plus annual	
		Since EPO yellowfin is predicted to rec case model, the team concluded that t	cover to $\sim SB_{MSY}$ by 2018 under current (2013-15) I he harvest strategy is expected to achieve manag	evels of fishing mortality, according to the base ement objectives – SG60 is met.	
Is the harvest strategy 'responsive to the state of the stock' as required by SG80? Reference points are agreed a according to these reference points (based on the most vulnerable stock). Since the status of bigeye and yellow estimated marginally below the MSY level according to the base case model), the tools set out in C-17-01 are lestock status of yellowfin and bigeye approximately equally. The IATTC scientists are required by C-17-01 to eva stock(s) and make recommendations accordingly, during 2018. On this basis, the team concluded that the harvest to the status of the stock. The elements of the strategy are working together (i.e. reference points and the stock a HCR \rightarrow management actions (C-17-01) \rightarrow evaluation during 2018 \rightarrow changes to management tools as required is met. SG100 requires the harvest strategy to be 'designed' to achieve stock management objectives. The HCR and to which is used to adjust the duration of the closure. It is a bit unclear on what basis the 62-day closure was initial correct duration when F_{mult} is close to one. At the 2017 plenary, it was agreed to extend the duration of closure recommendation of the Commission scientific staff (IATTC, 2017a), even though F_{mult} for yellowfin (the relevant one. The rationale for this is that they also estimate a 6.7 % capacity increase, which is also taken into account in of the closure (by adjusting Fmult to take account of the capacity increase). Presumably, they estimate that a closure will reduce effort by the correct amount to obtain the target biomass, atthough this working is not pro-		ence points are agreed and the HCR is defined sus of bigeye and yellowfin are similar (both are set out in C-17-01 are logically addressing the juired by C-17-01 to evaluate the impact on the oncluded that the harvest strategy is responsive ce points and the stock assessment outcome \rightarrow gement tools as required). On this basis, SG80			
		b be 'designed' to achieve stock management objet the closure. It is a bit unclear on what basis the 6 one. At the 2017 plenary, it was agreed to extend cientific staff (IATTC, 2017a), even though F_{mult} fo lso estimate a 6.7 % capacity increase, which is all ake account of the capacity increase). Presumate ct amount to obtain the target biomass, although	ectives. The HCR and tools are linked via F _{mult} , 2-day closure was initially determined to be the 1 the duration of closure to 72 days, based on a r yellowfin (the relevant stock) remains close to so taken into account in evaluating the duration bly, they estimate that an additional 10 days of this working is not provided in the document.		



		Nevertheless, this type of re-adjustment provides reassurance that this is a clear linkage between stock status and the duration of closure, and that there is a clearly-designed system for fixed the duration of the closure based on F _{mult} and other relevant factors. SG100 is met.			
b	Harvest	strategy evaluation			
	Guide post	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	Ν	
	Justifi cation	Evidence from projections of the base case model, Minte-Vera et al. (2016) suggest that the stock will recover even without C-17-01 – on this basis, SG80 is met. The harvest strategy is not due to be 'fully evaluated' until 2018, so SG100 is not met.			
C	Harvest	strategy monitoring			
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.			
	Met?	Y			
	Justifi cation	See under 1.2.3 and 1.2.4 below.			
d	Harvest	vest strategy review			
	Guide post			The harvest strategy is periodically reviewed and improved as necessary.	
	Met?			Y	
Justifi cation C-17-01 requires review of the harvest strategy during 2018 – see para. 18: In 2017 and 2018 the results of these measures shall be evaluated in the context of the results of the stock assessment changes in the level of active capacity in the purse-seine fleet and, depending on the conclusions reached by the IATTC in consultation with the Scientific Advisory Committee, based on such evaluation, the Commission shall take further active substantial extension of closure days for purse seine vessels or equivalent measures at its meeting in 2017. IATTC has been going through a process for some years of reviewing, evaluating and adjusting the harvest strategy to a current point; for example, stock assessment methodologies have changed, and quite a bit of work has gone into definin reference points and harvest control rules (e.g. Maunder and Deriso, 2007; 2013; 2014). This provides confidence that t be undertaken as planned in 2018. Met.				results of the stock assessments and of nclusions reached by the IATTC scientific staff, ommission shall take further actions including its meeting in 2017. djusting the harvest strategy to arrive at the bit of work has gone into defining appropriate This provides confidence that the review will	
	Shark fir	Shark finning			



е	Guide post	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 de finning is not takin	gree of certainty that shark g place.
	Met?	Not relevant	Not relevant	Not relevant	
	Justifi	Not relevant			
	cation				
f	Review	of alternative measures			
	Guide	There has been a review of the	There is a regular review of the potential	There is a biannu	al review of the potential
	post	potential effectiveness and	effectiveness and practicality of alternative	effectiveness and practicality of alternative	
		practicality of alternative measures to	measures to minimise UoA-related mortality of	measures to minimise UoA-related mortality	
		unwanted catch of the target stock	are implemented as appropriate	they are implement	ated as appropriate
	Met?	Not relevant	Not relevant	Not relevant	
	Justifi cation There is no unwanted catch of yellowfin in this fishery – not relevant.				
References Resolutions C-16-02 and C-17-01; Minte-Vera et al., 2016; Maunder and Deriso, 2007; 2013; 2014; IATTC, 2017a			2017a		
OVER	OVERALL PERFORMANCE INDICATOR SCORE: 95				
COND	CONDITION NUMBER (if relevant): N/a				N/a



Evaluation Table for PI 1.2.2 – Harvest control rules and tools EPO yellowfin

			There are well defined and effective harvest control rules (HCRs) in place			
Scoring Issue SC	SG 60	SG 80	SG 100			
a HCRs desig	gn and application					
Guide Go post or the re ap	Generally understood HCRs are in place or available that are expected to reduce the exploitation rate as the point of ecruitment 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	/	Y	Ν			
Justifi Tr cation i.e pr In Qu is re SC Qu lea re	 he HCR for tropical tunas is set out in Res. If the probability that F>F_{lim} is >10% that F will reduce to F_{MSY} or below, a If the probability that SB<sb<sub>lim is >2 probability that SB will recover to SE generations or 5 years, whichever is</sb<sub> he. It can be expected to keep the biomass precautionary probability of B<b<sub>lim set as a t in relation to SG80, it is 'well-defined' so the Question 1: Does the HCR ensure that the e is ~2*B_{lim}? It requires action to be taken if the educe the exploitation rate well above the pSG80 is met.</b<sub> Question 2: Is the HCR expected to keep the taken if the educe the solution is the HCR expected to keep the east a 50% probability that will recover to at ecover to this level. But in the case that the end of the solution is level. 	C-16-02, as follows: , management measures shall be establish and with a probability of <10% of F>F _{lim} . 10%, management measures shall be estable B _{MSY} or above, and with a probability of <10 is greater. above the limit reference point, most likely rigger for management action) and fluctuation first part is met. xploitation rate is reduced as the PRI is appre- e probability of F or SB exceeding the limit boom at which the limit is actually reached. e stock fluctuating around the target MSY re- or above SB _{MSY} ; this therefore suggests the stock does not recovery, the HCR would re-	hed such that there is at least a 50% probability blished such that there is at least a 50% b% that SB will decline to <sb<sub>lim within two above the default PRI (2*B_{lim}; given the relatively ing around MSY level – SG60 is met. broached, noting that the default PRI used by MSC reference point is >10% - i.e. action is required to On this basis, the team concluded that this part of efference points? If SB<sb<sub>MSY, the HCR requires at at it allows a probability of up to 50% that it will not equire additional action such that the stock arrives</sb<sub></sb<sub>			



		Overall, on the basis that the 10% probability trigger level is relatively precautionary, and on the basis that the stock status relative to MSY reference points is close to appropriate (SB=~95%SB _{MSY}), suggesting that the strategy works in practice, the team concluded that SG80 is met. (Note: This is consistent with the scoring for the Mexican NE tropical purse seine skipjack and yellowfin fishery; Morgan et al., 2017).				
		impossible to say what will happen to the sto stocks, so is likely to be more rather than le	ce the HCR has nothing to say about main ck at that point (although in practice manage ss precautionary). Not met.	ement is driven by the status of the worst of several		
b	HCRs ro	bustness to uncertainty				
	Guide post		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?		Y	N		
	Justifi cation	Justifi Key uncertainty in the stock assessment are addressed in sensitivity analyses, including the stock-recruit relationship and natural mortal (see Section 2.3.20); estimates of stock status relative to reference points are sensitive to these uncertainties (see 1.1.1). Although C-16-02 doesn't specify, the assumption is presumably that the status of stocks relative to reference points will be evaluate based on the base case stock assessment models. For yellowfin, this is more optimistic than several of the sensitivity runs, notably one that assumes a stock-recruit relationship of h=0.75 (see 1.1.1 and Section 2.3.20). However, the limit reference points are defined to the sensitivity runs of the sensitivity runs are defined to the sensitivity runs of the sensitivity runs are defined to the sensitivity runs of the sensitivity runs are defined to the sensitivity runs of the sensitivity runs are defined to the sensitivity runs of the sensitivity runs are defined to the sensitivity runs of the sensitivity runs are defined to the sensitivity runs relationship of h=0.75 (see 1.1.1 and Section 2.3.20).				
		precautionary level (see 1.1.1). In addition, the HCR requires action when $p(SB < SB_{lim})$ reaches 10% - i.e. well above the actual limit reference point level. So overall there is considerable precaution built into the HCR. Furthermore, empirically the harvest strategy seems to be working since it has maintained both bigeye and yellowfin F _{mult} at or close to one; corresponding to scientific advice.				
		A preliminary MSE has been attempted on the reference points and HCR for tropical tunas; using bigeye as an example (Maunder et a 2015), and suggests that although the key uncertainties (as well as recruitment variability) have an impact on the probability of biomass of fishing mortality going outside the bounds of the limit reference points, overall the harvest strategy does rebuild the (bigeye) stock toward the target under all scenarios.				
	On this basis, SG80 is met. SG100 is not met because there remain large uncertainties in the stock dynamics (e.g. stock definition, recruit relationship, natural mortality, recruitment).					
С	HCRs ev	valuation				
	Guide post	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	Y	Y		



Justifi	The tools to implement the HCR are set out in Res. C-17-01; the key tool is the seasonal closure. They were selected by IATTC because				
cation	they have been used in the past and/or can be used over periods longer than a year (see C-16-02); i.e. IATTC have taken a pragmat approach to the selection of appropriate tools. The closure is not explicitly linked to the HCR in the way that (for example) catch limit would be, but the number of days of closure have been adjusted according to F _{mult} (F _{MSY} /F) and other factors (e.g. estimated increases capacity; see IATTC, 2017a). Projections suggest a high probability of recovery under the additional measures put in place in C-17-C (see 1.1.2), and there is provision for review and adjustment according to outcome (see above and 1.2.1). On that basis, the availab evidence all indicates that the tools are likely to be effective controlling exploitation rates. SG80 is met.				
	In relation to SG100, SCS (2017) conclude that the stock status provides evidence that the tools are effective rates. Since that assessment, a more recent stock assessment (Minte-Vera et al., 2016) is a little more pess in relation to the MSY level (see 1.1.1b). However, the biomass remains close to the target level (see 1.1 for 2017-2020 was extended to 72 days (C-17-01 and C-17-02), based on F _{mult} as adjusted for capacity providing evidence that the tools are used appropriately based on the evidence available. On this basis, Se	e in achieving target exploitation simistic about spawner biomass .1), and in 2017 closure period y increases (see 1.2.1 above), G100 is met.			
References	5 ; IATTC, 2017a				
OVERALL PER	VERALL PERFORMANCE INDICATOR SCORE:				
CONDITION NU	N/a				



Evaluation Table for PI 1.2.3 – Information and monitoring EPO yellowfin

PI 1.2.3		Relevant information is collected to support the harvest strategy			
Scorin	ig Issue	SG 60	SG 80	SG 100	
а	Range o	finformation			
	Guide post	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.	
	Met?	Y	Y	N	
	Justifi cation Details of the information available are given i some operational data and some discard data observer coverage. Environmental data have to output significantly). On this basis, SG80 is met to a lack of data on stock dynamics (growth, na		are given in Section 2.3.19. There are good d scard data. Purse seine vessels (a high prop ata have been incorporated into the stock ass 680 is met. It is the case, however, that some of growth, natural mortality, recruitment) and stocl	ata available on landings, effort and size, including ortion of effort and catches in the EPO) have high essment in the past (although it did not change the f the key uncertainties in the stock assessment relate k structure (tagging); SG100 is not met on this basis.	
b	Monitorir	ng			
	Guide post	Stock abundance and UoA removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.	All information required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent uncertainties in the information [data] and the robustness of assessment and management to this uncertainty.	
	Met?	Y	Y	Ν	
Justifi cation A stock assessment is conducted annually using catch and effort data as set out above. The scientists note that they have rel confidence in the data (which includes operational data and is based on high observer coverage in the purse seine fleet) assessment reports include detailed consideration of different types of uncertainties in the data and in the model. On this base met. Parts of SG100 are also met, but it is hard to argue that 'all information is monitored with a high degree of certainty'; e. assessment report notes data gaps in relation to the sampling of species composition and length-frequency from purse sein not met in full.		ove. The scientists note that they have relatively high erver coverage in the purse seine fleet). The stock in the data and in the model. On this basis, SG80 is itored with a high degree of certainty'; e.g. the stock on and length-frequency from purse seiners. SG100			
	Compret	nensiveness of information			



C	Guide post		There is good information on all other fishery removals from the stock.		
	Met?		Y		
	Justifi cation	tifi The stock assessment covers all the main fleets; no particular issues are noted with fisheries that do not submit data.			
Refere	References Minte-Vera et al., 2016				
OVERALL PERFORMANCE INDICATOR SCORE: 80					80
COND	CONDITION NUMBER (if relevant): N/a				



Evaluation Table for PI 1.2.4 – Assessment of stock status EPO yellowfin

PI 1.2.4		There is an adequate assessment of the stock status			
Scoring Issue		SG 60	SG 80	SG 100	
а	Appropri	ateness of assessment to stock under	consideration		
	Guide post		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.	
Met?			Y	Y	
Justifi cation The stock assessment incl and the nature of each fish longitude and so on.) SG10		The stock assessment includes detai and the nature of each fishery (e.g. s longitude and so on.) SG100 is met.	letailed consideration of the biology of the species (e.g. growth, natural mortality, fecundity by age/sex); .g. selectivity, sex ratios, discards, type of set, fishing area, standardisation for longline by latitude and net.		
b	Assessm	nent approach			
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.		
	Met?	Y	Y		
	Justifi cation	See 1.1.1. SG80 is met.			
С	Uncertai	nty in the assessment			
	Guide post	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	Ν	
	Justifi cation The assessment incorporates uncertainty in inputs (e.g. recruitment variability) and estimates model uncertainty in outputs probabilis (via confidence intervals). It also addresses wider uncertainties in model configuration and input parameter estimates (model diagna and sensitivity analyses), and sets out probabilistic projections of future stock trajectories under different model assumptions (see 1 SG100 is met. Note: SCS (2017) note that there remain key unquantified (unquantifiable) uncertainties in the assessment, notably in relation to n mortality at age and stock definition, which preclude SG100 from being met. Although this is true, it is also true for partly all		estimates model uncertainty in outputs probabilistically on and input parameter estimates (model diagnostics stories under different model assumptions (see 1.1.2). Inties in the assessment, notably in relation to natural hough this is true, it is also true for nearly all stock		



		assessments, including WCPO yellowfin, where SG100 for this PI was agreed to be met at the MSC pilot harmonisation workshop. Therefore, MEC has decided for reasons of internal consistency in this assessment not to harmonise with SCS (2017).			
d	Evaluatio	on of assessment			
	Guide post			The assessment l robust. Alternativ approaches have	has been tested and shown to be e hypotheses and assessment been rigorously explored.
	Met?			Ν	
Justifi Alternative modelling approaches and opinions have been extensively explored, but it is hard to argue that the assessment is robu the output is highly sensitive to various different assumptions (see sensitivity analysis outputs; <u>Table 7</u> of main report). Not met.			at the assessment is robust, since of main report). Not met.		
е	Peer revi	ew of assessment			
	Guide post		The assessment of stock status is subject to peer review.	The assessmen externally peer re	t has been internally and eviewed.
	Met?		Y	Y	
	Justifi cation	The Scientific Advisory Committee provides internal review of stock assessments each year; the report for 2016 (IATTC, 2016b) shows extensive discussion on model inputs, output uncertainties, stock structure and data gaps. IATTC periodically convenes external expert panels to peer review stock assessments (e.g. Martell et al., 2013). SG100 is met.			
References Minte-Vera et al., 2016; Aires-da-Silva and Maunder, 2012 ; Martell et al., 2013; IATTC, 2016b					
OVER	OVERALL PERFORMANCE INDICATOR SCORE: 95				
COND		MBER (if relevant):			N/a



PRINCIPLE 2

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	
а	Main prir	nary species stock status			
	Guide postMain primary species are likely above the PRI		Main primary species are highly likely to be above the PRI	There is a high degree of certainty that main primary species are above the PRI and are	
		OR	OR	nucluating around a level consistent with MSY.	
		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.	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.		
Met?		Y	SP albacore – Y	SP albacore – Y	
			WCPO yellowfin – Y	WCPO yellowfin – Y	
			EPO yellowfin – Y	EPO yellowfin – N	
			WCPO bigeye – Y	WCPO bigeye – N	
			EPO bigeye - Y	EPO bigeye - N	
			sardine (Kuroshio stock) – Y	sardine (Kuroshio stock) – N	
			sardine (Tsushima stock) – Y	sardine (Tsushima stock) – N	
			Pacific saury – Y	Pacific saury – N	
	Justifi	Main primary species are (also see Section	on 2.4.3.1)		
	cation	ion UoA1: WCPO yellowfin, EPO yellowfin, WCPO bigeye, EPO bigeye, Japanese sardine (2 stocks), Pacific saury		ne (2 stocks), Pacific saury	
		UoA2: SP albacore, EPO yellowfin, WCPO	O bigeye, EPO bigeye, Japanese sardine (2	stocks), Pacific saury	
		UoA3: SP albacore, WCPO yellowfin, WC	PO bigeye, EPO bigeye, Japanese sardine	(2 stocks), Pacific saury	
		SP albacore: see commentary under Prine	ciple 1 scoring (Section 1.1). SG100 is met.		



WCPO yellowfin: see commentary under Principle 1 scoring (Section 1.2). SG100 is met. EPO yellowfin: see commentary under Principle 1 scoring. SG80 met. WCPO bigeve: In 2017, SPC conducted a new assessment which incorporated a revised growth curve (based on otolith age readings), and a new regional structure in the model (see discussion in Section 2.4.3.1). These changes resulted in a more optimistic stock assessment than was previously the case in Harley et al. (2014) although they carry a greater level of uncertainty: the assessment indicates that overfishing is likely not occurring (across all model runs, there is a 23% chance that F_{MSY} is being exceeded) and spawning biomass is estimated to be likely above the limit reference point with 16% of the model runs below the limit. On the basis of the revised stock assessment, the team considered that there is a 80% probability or that it is highly likely that WCPO bigeve is above the PRI. As such, SG80 is met, but not SG100. EPO bigeve: According to the most recent EPO bigeve stock assessment available (IATTC, 2015) biomass and fishing mortality at the end of 2013 were both at about 95% of the MSY level, and the stock was projected to rebuild to at or above the MSY level by 2018. Airesda-Silva et al. (2017) note, however, that stock projections are uncertain, particularly in relation to the stock-recruit relationship. Although the assessment team believed the stock is likely to be above the PRI (SG60 is met), the level of uncertainty was considered too high for the first clause of SG80 to be met. There therefore needs to be 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. The fishery does not have specific regulations about avoiding bigeye. However, catch and effort relative to the size of the EEZ is low (up to 75 licences, total catch ~700 t/year for an EEZ of 5 million km²). In addition, because the fleet is almost exclusively fresh-fish vessels, trips are not long (~10 days for fresh fish boats, 45 days for minority of freezer boats) and hence the parts of the EEZ furthest from Tahiti are rarely fished (see Figure 5); this includes the Marquesas Islands where most of the bigeye are, since it is the most equatorial part of the EEZ. Foreign vessels are not licensed to fish in French Polynesian waters. On this basis, the team considered that the UoA has

In relation to SG80, there is some evidence of recovery; the stock was projected to rebuild to the MSY level under status quo catches, as noted above. There is, however, no direct evidence as yet (e.g. stock assessment showing improvement).

measures in place that are **expected** to ensure that the UoA does not hinder recovery and rebuilding.SG60 is met.

In relation to EPO bigeye, this fishery overlaps with the NE tropical Pacific purse seine yellowfin and skipjack fishery; this fishery seemingly catches no bigeye, however (see Tables 10 and 12 in SCS, 2017). Catches of bigeye were less than 800 tonnes in 2014 and 2015 for both WCPO and EPO bigeye combined. Assuming this corresponds to 100% EPO bigeye (which is unlikely), this still makes up only 2% of the total longline catches of bigeye tuna in the eastern Pacific Ocean (estimated at 39,933 tonnes for 2015). In accordance with Clause d of the below requirements, SG80 is met.

Extract from FCR v2.0: SA3.4.6: At the SG80 level, where a species is below the level at which recruitment could be impaired, the team shall recognise "evidence of recovery" or a "demonstrably effective strategy" as being in place such that all MSC UoAs do not collectively hinder recovery of the species using any or a combination of the following as rationale:



	a. Direct evidence from time series estimates of stock status.
	b. Indirect evidence from time series of indicators or proxies of stock status indicative of the state of the whole stock.
	c. Indicators, provies of absolute estimates of exploitation rate that show that fishing mortality experienced by the stock is lower than EMSY
	d. Direct evidence that the proportion of combined catch by all MSC LloAs relative to the total catch of the stock does not
	hinder recovery.
	SG80 is met for bigeye. SG100 is not met.
	Sardine (Kuroshio stock)
	B _{lim} for this stock is set at 221,000 t, current stock biomass (2014) is estimated at 548,000 t. The stock biomass is extremely variable, due (it is thought) to decadal scale climatic fluctuations. The 2016 TAC was 479,000 t. Total bait use in this fishery (2015) was 1555 t, so even if 100% of the bait used came from this stock, it would only represent 0.3% of the TAC on the stock. Since the biomass is above B _{lim} , the team concluded that it was 'highly likely' to be above the PRI; SG80 is met. Biomass has in the past, however, been much greater (e.g. in the 1980s; see Section 2.4.3.2 and 2.4.3.3); the strong environmental influence on the stock over long timescales makes a 'high degree of certainty' difficult; SG100 is not met, although the team had a high degree of confidence that this fishery is not having any significant effect on this stock.
	Sardine (Tsushima stock)
	Biomass in 2015 was estimated to be above B _{lim} and B _{ban} (100,000 t and 5,000 t) but below one million t, putting the stock status at 'medium' according to the Japanese FRA. Current F is estimated at 0.24 and recruitment has been increasing in recent years. The catch in 2015 was 69,000 t from Japan; South Korea took another 3,000 t. If 100% of the bait used in the fishery came from this stock, it would represent 2.2% of total Japanese and Korean catches on the stock; this is, however, not that likely since catches from the other stock are more than 6 times higher. Since the biomass is above B _{lim} , the team concluded that it was 'highly likely' to be above the PRI; SG80 is met. SG100 is not met for the same reason as for the Kuroshio stock, although again the team was confident that this fishery is not impacting the stock.
	Pacific saury
	According to the most recent assessment summary (2016) the total catch from the stock (all countries combined) was 625,000 t in 2015. The scientists estimate the biomass declined between 2008-2010, since when it has remained stable; the most recent estimate is ~999,000 t. Blim is not formally agreed, but FRA estimate a range of possible values, and this biomass is above all likely values of Blim. SG80 is met. MSY reference points are not defined so SG100 is not met, although again, the team was confident of zero impact on the stock from this fishery.
	r primary species stock status
_	



b	Guide post			For minor species evidence that the	that are below the PRI, there is UoA does not hinder the recovery
				and rebuilding of r	minor primary species
	Met?			Y	
	Justifi cation	Minor primary species are: blue marlin, stri	ped marlin, swordfish and skipjack. None	are below the PRI (s	see Section 2.4.3.4). Met.
Refer	ences	Harley et al., 2014; IATTC, 2015; Pilling e Tuna Fishery Yearbook; Morgan et al., 201	tt al., 2016d; USA, 2016; Akroyd and McL 7; http://abchan.fra.go.jp/digests28/index.	oughlin, 2017; Dau <mark>html</mark>	me and Morison, 2016; WCPFC
Speci	ies/stock		UoA		Score
SP al	bacore		2, 3		100
WCPO	O yellowfi	in	1, 3		100
EPO	yellowfin		1, 2		80
WCPO	O bigeye		1, 2, 3		80
EPO	bigeye		1, 2, 3		80
Sardi	ne (Kuros	shio stock)	1, 2, 3		80
Sardi	ne (Tsush	nima stock)	1, 2, 3		80
Pacifi	ic saury		1, 2, 3		80
Minor	Minor		1, 2, 3		100
					UoA1: 90
OVERALL PERFORMANCE INDICATOR SCORE:					UoA2: 90
					UoA3: 90
CONE		JMBER (if relevant):			N/a



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					
	Guide post	There are measures in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to above the point where recruitment would be impaired.	There is a partial strategy in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the point where recruitment would be impaired.	There is a strategy in place for the UoA for managing main and minor primary species.	
	Met?	Y	Y	N - WCPO yellowfin, EPO yellowfin, WCPO bigeye, EPO bigeye, SP albacore , minor	
				N - Japanese sardine (2 stocks), Pacific saury	
	Justifi	Main primary species are (also see Section 2	.4.3.1)		
	cation	UoA1: WCPO yellowfin, EPO yellowfin, WCP	O bigeye, EPO bigeye, Japanese sardine (2 s	tocks), Pacific saury	
		UoA2: SP albacore, EPO yellowfin, WCPO b	igeye, EPO bigeye, Japanese sardine (2 stock	s), Pacific saury	
		UoA3: SP albacore, WCPO yellowfin, WCPO	bigeye, EPO bigeye, Japanese sardine (2 sto	cks), Pacific saury	
		MSC definition of a strategy (Table SA8):			
		A " strategy " represents a cohesive and strategic arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and which should be designed to manage impact on that component specifically. A strategy needs to be appropriate to the scale, intensity and cultural context of the fishery and should contain mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts.			
		A " partial strategy " represents a cohesive arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and an awareness of the need to change the measures should they cease to be effective. It may not have been designed to manage the impact on that component specifically.			
		In addition to the stock-level management in place at regional level (as described in Section 2.4.3.3), the team considered that a partial strategy is in place for target and bycatch species in French Polynesia, which is to maintain fishing effort in the EEZ at a low level. This is achieved by the de facto limit on longline licences (75); ii) no licensing of foreign vessels to fish in the EEZ; iii) no purse seining in the EEZ and iv) maintaining the local fleet as relatively small, fresh fish vessels rather than larger, industrial freezer vessels. The team			



		concluded that this constitutes a 'partial strategy' under MSC's definition, since the measures work together to achieve an outcome (i.e. to maintain fishing pressure on target and bycatch stocks at a precautionary low level), and with the possibility to to change the measures as required. On this basis, the team concluded that SG80 is met for the bycatch component (i.e. WCPO yellowfin, EPO yellowfin, WCPO bigeye, EPO bigeye, SP albacore and minor species). Bait: As set out in PI 2.1.1a, the amount of bait used by this fishery is trivial in comparison to the biomass and landings from the three bait stocks. This, together win the fact that the volume of bait use is known and that each bait species has a stock assessment, constitutes a partial strategy to ensure that the fishery has no impact on the stock. It does not, however, meet MSC's definition of a strategy as given above, so SG100 is not met.			
b	Manage	ment strategy evaluation			
	Guide post	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the fishery and/or species involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved.	
	Met?	Y	Y	N - WCPO yellowfin, EPO yellowfin, WCPO bigeye, EPO bigeye and SP albacore, minor N - Japanese sardine (2 stocks), Pacific saury	
	Justifi cation	WCPO yellowfin, EPO yellowfin, WCPO bige strategy for bycatch species. The level of fishin under 3.2.3 below and is considered to be lo sub-tropical Pacific Ocean. SG80 is met. The EEZ) – SG100 is not met. Bait: For bait there is considered to be a p confidence that the fishery is having negligibl	ye, EPO bigeye, SP albacore and minor: As no ng pressure in the EEZ is known (VMS; logbook w – surveillance is good) and is objectively low ere is, however, no formal testing (e.g. stock as partial strategy. Information on total landings a e impact; SG80 is met. There is, however, no f	ted above, there is considered to be a partial and observer data; IUU fishing is considered v relative to most other areas of the tropical / ssessments specific to the French Polynesia and/or TACs provide an objective basis for formal 'testing', so SG100 is not met.	
С	Manage	ment strategy implementation			
	Guide post		There is some evidence that the measures/partial strategy is being implemented successfully .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its overall objective as set out in scoring issue (a).	



	Met?		Ŷ	Y - WCPO yellowfin, EPO yellowfin, WCPO
				minor
				Y - Japanese sardine (2 stocks), Pacific
				saury
	Justifi cation	Bycatch species: Evidence for implementation sampling), logbooks and the MCS system as effort at a precautionary low level) is being ac	on of the partial strategy includes licences, V described under Principle 3. The overall objecti hieved. SG100 is met.	MS and observer data, landings data (port ve of the partial strategy (maintaining fishing
		Bait: Evidence for the implementation of the p ii) publically available information on the stat Section 2.4.3.2). The partial strategy clearly e	bartial strategy for bait comes from i) records o tus of these stocks and the fishery, from the ensures that the impact of the fishery on these	n the purchase of bait from this fishery; and Japanese FRA (as set out in PI 2.1.1a and stocks is negligible. SG100 is met.
d	Shark fin	Shark finning		
	Guide post	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
	Justifi cation	No primary species are sharks: sharks are all	protected in French Polynesia and are therefore	re considered under ETP species below.
е	Review of	of alternative measures		
	Guide	There is a review of the potential	There is a regular review of the potential	There is a biennial review of the potential
	post	effectiveness and practicality of alternative measures to minimise LloA-related mortality	effectiveness and practicality of alternative measures to minimise LloA-related mortality	effectiveness and practicality of alternative
		of unwanted catch of main primary species.	of unwanted catch of main primary species	mortality of unwanted catch of all primary
			and they are implemented as appropriate.	species, and they are implemented, as appropriate.
	Met?	Y	Y	Ν
	Justifi	All main bycatch species are retained for sale	e so there is no unwanted catch of main prima	y species. Highgrading is not considered by
	cation	the DRMM to be an issue in this fishery as trip	es are quite short and holds are rarely complete	ly filled. SG60 and SG80 are met by default.
		Bait is purchased: not relevant.	not not.	
		DRMM logbook and observer data; see also I	Pls 2.1.1, 3.2.3 and references therein	
Refere	ences	он та	, <u> </u>	



Species/stock	UoA	Score
SP albacore	2, 3	85
WCPO yellowfin	1, 3	85
EPO yellowfin	1, 2	85
WCPO bigeye	1, 2, 3	85
EPO bigeye	1, 2, 3	85
Sardine (Kuroshio stock)	1, 2, 3	85
Sardine (Tsushima stock)	1, 2, 3	85
Pacific saury	1, 2, 3	85
Minor	1, 2, 3	85
		UoA1: 85
OVERALL PERFORMANCE INDICATOR SCORE:	UoA2: 85	
	UoA3: 85	
CONDITION NUMBER (if relevant):	N/a	



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			
Scorin	g Issue	SG 60	SG 80	SG 100	
а	Informati	on adequacy for assessment of impact on m	ain species		
	Guide post	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 adeqaute 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?	Y	Y	Y	
Justifi cation Bycatch species: There is quantitative information on the catch of main and minor primary species (port sampling and observers. Each of the main primary stocks has a stock assessment (see 2.1.7 on total landings and stock biomass (although in some cases, these are uncertain; details given in 2 fishery on these stocks can be evaluated as trivial with a high degree of certainty: SG100 is met		ecies (landings and discards) from logbooks, ee 2.1.1a), providing quantitative information ven in 2.1.1a). In all cases, the impact of this met.			
	Bait species: There is quantitative information on the purchase of bait (based on DRMM data and verified during the site visiteam). Each of the bait stocks has a stock assessment, providing quantitative information on total landings and stock biomas given in 2.1.1a). In all cases, the impact of this fishery on these stocks can be evaluated as negligible with a high degree of SG100 is met.				
b	Informati	on adequacy for assessment of impact on m	inor species		
	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.	
	Met?			Y	
Justifi See above – met. cation					



С	Informat	mation adequacy for management strategy			
	Guide post	Information is adequate to support measures to manage main primary species.	Information is adequate to support a partial strategy to manage main Primary species.	Information is a strategy to mana and evaluate wi certainty whether its objective.	dequate to support a ge all primary species, th a high degree of the strategy is achieving
	Met?	Y	Y	Y - WCPO yellowfi bigeye, EPO big minor N - Japanese sa	n, EPO yellowfin, WCPO eye and SP albacore, rdine (2 stocks), Pacific
				saury	
Justifi cation Bycatch species: A partial strategy is in place (see 2.1.2); however the information required to support a strategy (fishing efformation and VMS, landings, discards) is available as set out above. Surveillance and enforcement is good (see 3.2.3) and would enable with a high degree of certainty whether the strategy is achieving its objective. SG100 is met.			fishing effort via licences would enable evaluating		
		Bait: In 2.1.2 the team concluded that there this partial strategy (bait use, stock assess	2.1.2 the team concluded that there is a 'partial strategy' in place for bait rather than a strategy. Information is sufficient to support rtial strategy (bait use, stock assessments). SG80 is met, but in the absence of a formal strategy, SG100 is not met.		
References DRMM logbook and observer data; see also PIs 2.1.1, 3.2.3 and references therein					
Specie	es/stock		UoA		Score
SP alb	bacore		2, 3		100
WCPC) yellowfi	n	1, 3		100
EPO y	ellowfin		1, 2		100
WCPC) bigeye		1, 2, 3		100
EPO b	oigeye		1, 2, 3		100
Sardir	ne (Kuros	hio stock)	1, 2, 3		95
Sardine (Tsushima stock)		ima stock)	1, 2, 3		95
Pacific saury			1, 2, 3		95
Minor			1, 2, 3		100
OVERALL PERFORMANCE INDICATOR SCORE:					UoA1: 95



	UoA2: 95
	UoA3: 95
CONDITION NUMBER (if relevant):	N/a



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			
а	Main sec	condary species stock status	ondary species stock status				
Guide post		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	Y	Y			
	Justifi cation There are no 'main' secondary species (see Section 2.4.3.1); SG100 is met by default.						
b	Minor se	secondary species stock status					
Guide post				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?			Ν	
	Justifi There is a long list of minor secondary species (see <u>Table 9</u>) and they have not been evaluated individually. Using an all or no approach, this scoring issue is therefore not met.			. Using an all or nothing	
Refere	References UoA logbook and observer data				
OVER	OVERALL PERFORMANCE INDICATOR SCORE: 90			90	
COND	CONDITION NUMBER (if relevant): N/a			N/a	



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.					
Scorir	ng Issue	SG 60	SG 80	SG 100			
а	Manager	ment strategy in place					
	Guide post	There are measures in place, if necessary, which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a partial strategy in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be within biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a strategy in place for the UoA for managing main and minor secondary species.			
	Met?	Y	Y	Y			
	Justifi cation	Since there are no main secondary species, SG80 is met by default. For SG100, the strategy for secondary species is the same as that for primary species, as described in PI 2.1.2a; it applies to all species since it aims to keep overall fishing pressure low. SG100 is met.					
b	Manager	agement strategy evaluation					
	Guide post	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or species involved.			
	Met?	Y	Y	Ν			
	Justifi cation	See PI 2.1.2b for bycatch species. SG80 is met but SG100 is not met.					
C	Manager	Anagement strategy implementation					
	Guide post		There is some evidence that the measures/partial strategy is being implemented successfully .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).			
	Met?		Y	Y			



	Justifi cation	See PI 2.1.2c for bycatch species. SG100 is met.				
d	Shark fin	ining				
	Guide post	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 c shark finning is no	legree of certainty that ot taking place.	
	Met?	Not relevant	Not relevant	Not relevant		
	Justifi cation	Sharks in French Polynesia are protected and	therefore considered under ETP species. Not r	elevant.		
е	Review of	of alternative measures to minimise mortality of unwanted catch				
	Justifi cation	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 biennia effectiveness and measures to mortality of un secondary spec implemented, as a	al review of the potential practicality of alternative minimise UoA-related wanted catch of all cies, and they are appropriate.	
	Met?	Y	Y	N		
	Guide post	Since there are no main secondary species, SG60 and SG80 are met by default. Not all minor secondary species are desirable, and as far as the team is aware there is no biennial review of alternative measures to minimise these catches. SG100 is not met.				
References		UoA logbook and observer data				
Site visit interviews						
OVER	ALL PER	FORMANCE INDICATOR SCORE:			90	
COND	ITION NU	MBER (if relevant):			N/a	



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.			
Scorin	ng Issue	SG 60	SG 80	SG 100	
а	Informati	ion adequacy for assessment of impacts of	on main secondary species		
	Guide post	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	Y	Y	
	Justifi cation	Since there are no main secondary spec	cies, SG100 is met by default.		
b	Informat	ion adequacy for assessment of impacts	on minor secondary species		
	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.	
	Met?			Ν	
Justifi cationThere is a long list of minor secondary a mortality to point of discard) can be ex status, so SG100 is not met in full.		There is a long list of minor secondary sp mortality to point of discard) can be eva status, so SG100 is not met in full.	becies (see <u>Table 9</u>). The impact of the UoA on t luated via the observer reports, but in some ca	these stocks in terms of catch (landings, discards, ases little is known about the stock structure and	
С	Information adequacy for management strategy				
	Guide post	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	Y	Y		
	Justifi	See 2.1.3c for bycatch species. SG100 is	s met.			
	cation					
References		UoA logbook and observer data				
Site visit interviews						
OVER	OVERALL PERFORMANCE INDICATOR SCORE: 95					
COND	CONDITION NUMBER (if relevant): N/a					



Evaluation Table for PI 2.3.1 – ETP species outcome

		The UoA meets national and international requirements for the protection of ETP species				
PI 2.3	5.1	The UoA does not hinder recovery of ETP s	pecies			
Scorin	ig Issue	SG 60	SG 80	SG 100		
а	Effects o	f the UoA on population/stock within national or	e UoA on population/stock within national or international limits, where applicable			
Guide post		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 scored – no limits	Not scored – no limits	Not scored – no limits		
Justifi cation ETP species are discussed in Section 2.4 - all sharks (excluding rays; 20 spp. – see - manta rays; - turtles (green, hawksbill, leatherback, log - marine mammals; and - seabirds (petrels, skuas, albatross, book For none of these species is there anything so this scoring issue is not scored.		 ETP species are discussed in Section 2.4.4 an all sharks (excluding rays; 20 spp. – see <u>Tabl</u> manta rays; turtles (green, hawksbill, leatherback, loggerh marine mammals; and seabirds (petrels, skuas, albatross, booby). For none of these species is there anything that so this scoring issue is not scored. 	d include the following: <u>e 10</u>); ead); provides formal 'limits' (national or internationa	al) which would trigger management action,		
b	Direct ef	fects				
	Guide post	Known direct effects of the UoA are likely to not hinder recovery of ETP species.	Known direct effects of the UoA are highly likely to not hinder recovery of ETP species.	There is a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species.		
	Met?	Y	Y - mantas, mammals, sharks	N		
			N – turtles, birds			
	Justifi cation Sharks: The total direct effects of the fishery on sharks are estimated in <u>Table 10</u> , including estimates of total fleet bycate mortality and post-discard mortality. Note, however, that these estimates should be considered at an order of magnitude rat absolute values. It is estimated that the fishery may cause mortality of the order of:			g estimates of total fleet bycatch, bycatch ed at an order of magnitude rather than as		
		- 1,200 individuals / year of blue shark;	when the make and brooms wholey the star			
		- 500 individuals / year of oceanic white-tip shark, short-fin mako and bronze whaler shark;				


-	100-500 long-fin mako, bigeye thresher, silky shark and pelagic thresher;
-	10-100 silver shark, sandbar shark, black-tip reef shark and crocodile shark; and
-	<10 per year of the seven remaining species (see <u>Table 10</u>).
B h c (e si th	Blue sharks: The recent stock assessment of South Pacific blue shark (for which this fishery provided an important dataset – Rice an larley, 2013a) estimates biomass depletion (B/B ₀) to be 8 % - 10 % - i.e. it estimates that the stock is depleted. The assessment is nowever, very uncertain due to poor data. The stock assessment has first to reconstruct the catch, which it attempts in various ways coming up with a range per year for the last two years of the time series (2012 and 2013) of ~250-750,000 individuals per year extrapolated from Figure 30 in Tremblay-Boyer and Takeuchi, 2016). This compares with an estimated annual mortality (including a stimate of post-release mortality) from this fishery to the order of 1200 / year, i.e. $0.2 \% - 0.5 \%$ of the catch; note that this is conservative ince the stock assessment does not attempt to include discards and post-release mortality. On this basis, the known direct effects on the fishery are highly unlikely to hinder recovery of this stock. SG80 is met.
O a th st fis	Decanic white-tip: The stock assessment of WCPO oceanic white-tip (Rice and Harley, 2012) estimated current catch at 2,001 t/yee and MSY at 2,700 t/year. Scaled up observer data gives an average total catch for this fleet of 65 t/year, which, with a survival to poin of discard of 67 % and an (assumed) post-release mortality of 20 % results in a total mortality of 29.7 t/year, or 1.1 % of MSY; noting the his estimate of MSY only covers part of the Pacific Ocean; the stock may be larger, or this fishery may take only part of its catch on the tock and part on an EPO stock (situation analogous to yellowfin, except with less data). On this basis, the known direct effects of the shery are highly unlikely to hinder recovery of this stock. SG80 is met.
S b in 2 th h	Short-fin mako, bronze whaler: Although the impact of the fishery in terms of mortality on short-fin mako and bronze whaler sharks can be evaluated, there is no information on the population size in French Polynesia or the southern Pacific for either species (although according to the WCPFC Secretariat (2016), a stock assessment for South Pacific short-fin mako is tentatively scheduled for 2018; a indicator-based analysis for New Zealand suggests no cause for concern, but it is not clear that this is relevant here – Francis et a 2015). However, given that the known direct effects of the UoA amount to ~one shark (of each species) per 1000 km ² of EEZ per year the team concluded that it is 'highly likely' (defined by MSC as at least an 80% probability for this PI; Table SA9) that the fishery is no indering recovery and rebuilding for these species. SG80 is met.
S e b	Silky shark: The most recent stock assessment (Rice and Harley, 2013b) estimates 'current' catch (2005-8) at 5,331 t (although th stimate is highly uncertain). This fishery catches ~7.5 t/year, resulting in a mortality of ~3.9 t/year, or ~0.07 % of the total catch. On th asis, SG80 is met.
L to	.ong-fin mako, bigeye thresher, pelagic thresher: Making the same argument as for short-fin mako, the mortality from this fishery amoun ວ ~one shark per 40,000 km² of EEZ per year for each species. SG80 is met.
С	Other species: One shark per 50,000 km ² of EEZ per species per year, or less. SG80 is met.
0	Overall, considering the levels of uncertainty in stock assessments and the low level of observer coverage in this fishery, the tea considered that SG100 was not met for sharks.



Mantas: Observers record one interaction with a giant manta in the three years, resulting in the animal being released alive. On this basis, the team considered that interactions are insignificant and highly unlikely to hinder recovery; SG80 is met.
Turtles: Recorded impact on turtles (from observer reports) are one each for four species: green, hawksbill, leatherback and loggerhead, over the three years of observer data, scaling up to approximately to 10 interactions per year (all species combined) but with low percentages of observer information there is uncertainty in the precision of this scaled value. No analysis has been done for this fishery on the potential impact of turtle bycatch. However, at least two Regional Management Units (RMUs – loggerhead (recorded in bycatch) and olive ridley (no records) overlap with the French Polynesia EEZ and are considered to be at high risk from bycatch in longlines (Table 11).
The US government (NOAA-Fisheries) have done an analysis for the American Samoa longline fishery, which has a similar bycatch profile (although with fewer species of shark). They estimate that 10 interactions with green turtles corresponds to 0.05 mortalities on adult nesting females (because interactions occur almost exclusively with juveniles). Green turtles in French Polynesia most likely come from the central South Pacific population segment (the smallest), and on that basis, this would correspond to an impact of 0.0017 % of adult nesting females per year. Similarly, the analysis concludes that the impact on the leatherback population (SW Pacific) is ~0.0001 % per year and the hawksbill population (Oceania) and the loggerhead population (South Pacific) is ~0.001 %. On this basis, NOAA concluded that American Samoa is meeting its obligations under the US Endangered Species Act. (These analyses are worked out based on a figure of 10 interactions / year for each species.)
A key part of this analysis hinges on the fact that all the turtles caught are juveniles (hence natural mortality is applied to work out the mortality per nesting female associated with one juvenile mortality). This is known in American Samoa from observer data, but is an assumption here. It is reasonable for leatherback, loggerheads and hawksbills, which do not nest in French Polynesia, but may not always apply for green turtles, because there is regular or punctual nesting recorded for Bora Bora, Maiao, Maupiti, Scilly (classed as a turtle reserve since 1992) and Bellinghausen in the Society Island as well as on Tikehau and Mataiva in the Tuamotu Islands (www.temanaotemoana.org) (Figure 16). Of all of the islands and atolls surveyed in French Polynesia 41 % (57 in total) have been identified as potential green turtle nesting sites. If the fishery takes nesting-age females, the impact will be more serious. If all interactions are with adult females, the impact on the central South Pacific population would be 0.3 % per year, but the impact on local nesting populations could be higher. A survey of nesting at Tetiaroa, however, suggests that the population is stable or increasing (see Section 2.4.4.4).
On this basis, it is not known whether the direct effects of the UoA are highly likely to not hinder recovery of ETP species therefore SG80 is not met.
Birds: It is difficult to evaluate bird interactions in detail, because they are not always identified to species in the observer reports. However, given the low level of interactions and generally the low level of fishing pressure over a very large area (5,000,000 km ² ; 118 islands of which 51 are uninhabited), the team has some confidence that impacts are likely to be small – SG60 is therefore met for seabirds. There are, however, some petrel species on the French Polynesia red list (IUCN, 2015). Given that most of the interactions are with unidentified petrels, there is no high level of confidence, that populations are not hindered. The lack of identification to species level and observer coverage lower than CMM requirements (5 %) (CMM 2007-01, point 6 – see Section 2.4.1) means there is low certainty of the scale of the fishery's impact. Improved data collection and higher observer coverage would be required for SG80 to be met.



		Mammals: According to observer data, interactions with mammals (except for depredation) are rare; none are reported in the three year's data given to the team. On this basis, there was a high degree of confidence that impacts are negligible – SG100 is met.				
С	Indirect effects					
	Guide post		Indirect effects have been considered and are thought to be highly likely to not create unacceptable impacts.	There is a high deg there are no s indirect effects of species.	gree of confidence that significant detrimental f the fishery on ETP	
	Met?		Y	Y – sharks, manta	, mammals	
				N – birds, turtles		
	Justifi cation	Note: Discard and post-release mortality is accounted for in the data cited above and is therefore not an indirect effect. The team considered possible indirect effects to be as follows:				
		Turtles: Disturbance around posting areas / int	or-posting foraging areas			
		Mammals: Noise disturbance, change in foraging behaviour				
		Birds: Disturbance around nesting / roosting areas				
		Turtles / birds: Disturbance around inshore nesting, foraging or roosting areas is a possibility, because vessels are not restricted in going close to islands, although they report that they will tend not to, due to the risk of gear entanglement. However, the overall level of fishing pressure is low, meaning that significant disturbance is not likely. SG80 is met but SG100 is not met.				
		Mammals: Noise disturbance is likely to be mir to the size of the EEZ. It is known that marine longlines – individual fishers will try to mitigate risk of bycatch (considered above), it has been themselves is positive, as one would expect. O	nimal because the vessels in this fishery are normammals have changed their foraging behavior this by avoiding setting or hauling in the preser shown in other fisheries (e.g. orcas in toothfish overall, the team concluded that SG100 is met.	ot large, and the num our in response to the ice of mammals if po- fisheries) that the in	mber is limited relative le availability of fish on ossible. Aside from the npact on the mammals	
Refere	ences	Rice and Harley (2012; 2013a); Tremblay-Boy Secretariat, 2016; Francis et al., 2015; NOAA-I	/er and Takeuchi, 2016; Takeuchi et al., 2016 Fisheries, 2015; CMM 2007–01; CMM 2008-03	; Rice and Harley,	2012; 2013b; WCFPC	
Eleme	ent				Score	
Shark	s				90	
Mantas					90	
Turtle	S				70	
Birds					70	
Mamn	Mammals 90					



OVERALL PERFORMANCE INDICATOR SCORE:	75
CONDITION NUMBER (if relevant):	5



Evaluation Table for PI 2.3.2 – ETP species management strategy

		The UoA has in place precautionary management strategies designed to:				
PI 2.3.2		meet national and international requirements;				
		ensure the UoA does not hinder recove	ery of ETP species.			
		Also, the UoA regularly reviews and imple	ments measures, as appropriate, to minimi	se the mortality of ETP species.		
Scorin	ig Issue	SG 60	SG 80	SG 100		
а	Manager	ment strategy in place (national and internation	nal requirements)			
	Guide post	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?	Y	Y	Ν		
	Justifi cation	A " strategy " represents a cohesive and strategic arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and which should be designed to manage impact on that component specifically. A strategy needs to be appropriate to the scale, intensity and cultural context of the fishery and should contain mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts. A " comprehensive strategy " (applicable only for ETP component) is a complete and tested strategy made up of linked monitoring, analyses, and management measures and responses. The team considered that a strategy is in place for managing the UoA's impact on ETP species on the basis of the following: ETP species are clearly and unambiguously protected under the Code de l'Environnement, which bans targeting and retention of protected species, as well as deliberate disturbance, possession, sale, trade etc. and also sets out the penalties for contravention. Specifically there are several separate ministerial decrees which: 1) ban the taking (incidental or otherwise) of any sharks: 2) ban the				
	practice of shark finning ; 3) establish the EEZ as a shark sanctuary; 4) declare the entire EEZ as a marine mammal sanctuary with and regulations for whale-watching and dolphin encounter eco-tourism; 5) declare the entire EEZ as a marine turtle sanctuary als attendant rules, regulations and penal consequences for transgressions. In some cases, these measures go above and beyond the WCPFC CMM requirements – where they do not, the CMM is applied			Z as a marine mammal sanctuary with rules EEZ as a marine turtle sanctuary also with where they do not, the CMM is applied as a		
		derault. Note nowever that the lishery is outs	ide the zone for implementation of the CMIM or	i bilus (2015-03).		



		Since this fishery is the only commercial longline fishery in the EEZ, and hence fishing pressure (number of hooks per km ² per year) is low, a large number of additional measures are not required to maintain interactions with ETP species at an acceptable level (see 2.3.1b). However, there is a process by which interactions are quantified (observers, Part I report), and hence if rates of interaction were seen to change, action could be taken; e.g. via additional licence conditions. On this basis, the team concluded that these measures constitute a strategy which is designed to be highly likely to achieve national and international requirements for the protection of ETP species. SG80 is met. In relation to SG100, the team concluded that because there is not a systematic and formal system for reviewing ETP interactions and measures within DRMM, there is not a comprehensive strategy – not met.					
b	Manager	ment strategy in place (alternative)					
	Guide post	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?	Not scored	Not scored	Not scored			
	Justifi cation	Only scored where there are no requirement agreements.	ts for protection and rebuilding provided throu	gh national ETP legislation or international			
С	Manager	nent strategy evaluation					
	Guide post	The measures are considered likely to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is 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	Y	Ν			
	Justifi cation	Instifi The analysis set out in Section 2.2.4 and the rationale for 2.3.1b shows that there is an objective basis for confidence that the st is working. SG80 is met. There is, however, a lack of quantitative information at the population level for most ETP species. T addition to identification issues in observer data (particularly in relation to birds), does not enable a full quantitative analysis of the of the fishery on the population – SG100 is not met.					
d	Manager	nent strategy implementation					
	Guide post		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?		Ν	Ν			
	Justifi cation	All ETP species: during site visit interviews with a wide range of stakeholders (see Section 3.4.1), non-compliance with the Code de l'Environnement (which declares the French Polynesia EEZ as a shark, whale and seaturtle sanctuary) was not a cause for concern in this fishery. The DRMM equally reported no issues with non-compliance in relation to the Code de l'Environnement. Overall, whilst there is no evidence that the measures described in SIa are not being implemented successfully, the observer coverage in this fishery is currently too low to provide evidence that this is indeed the case.					
		During the site visit, some specific issues on	implementation of ETP management came to I	ight:			
		- Implementation of CMM 2008-03 point 6 'shall ensure that the operators of all such longline vessels carry and use line cutters and de-hookers to handle and promptly release sea turtles caught or entangled promptly release sea turtles caught or entangled' does not appear to be consistently adhered to.					
		- The evidence of interaction rate comes from (5 %) (CMM 2007-01, point 6).	observer data, and current observer rates are	below those required by CMM requirements			
		- For some species (birds) identification is a problem; it is not possible to say, for example, whether the fishery interacts with the petrel species which are protected.					
		On the basis of the above points the measure	es/strategies are not being implemented succes	ssfully, SG80 is not met.			
е	Review of	of alternative measures to minimize mortality o	f ETP species				
	Guide post	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	Y	Y			
	Justifi At the annual meeting of the WCPFC Scientific Committee, the Ecosystem and Bycatch Mitigation Theme exists to de Working and information papers presented to SC12 (2016) include the following: • EB-WP-05: Technical details on the development of shark management plans • EB-WP-06: Implications of the choice of mitigation measure on mortality of silky and oceanic white-tips • EB-WP-07: The outcome of different shark handling practices for post-release mortality • EB-WP-08: Review of available information on non-key sharks [including mantas and mobulids] and fisheries intervention • EB-WP-10: Improving tori line performance in small vessel longline fisheries • EB-WP-11: Report of a WCPFC workshop on the effectiveness of turtle bycatch mitigation measures • EB-WP-12: Effectiveness of caphird mitigation measures			Aitigation Theme exists to do precisely this. d oceanic white-tips ality nd mobulids] and fisheries interactions			
		 EB-WP-11: Report of a WCPPC wold EB-WP-13: Effectiveness of seabird 	mitigation measures on small vessels north of 2	23° S			



		EB-IP-04: Cross-taxa comparison of the effectiveness of mitigation measures for elasmobranchs				
		EB-IP-05: Advice from ACAP on reducing longline impacts on birds				
		EB-IP-06: Development and testing of the 'hook pod' to reduce seabird impacts in New Zealand longlin	e fisheries			
		EB-IP-11: Use of biodegradable twine				
		Likewise at SC11:				
		EB-WP-02: Monte Carlo simulation modelling of measures to reduce impacts on silky and oceanic white-tip sharks				
		EB-WP-05: Analysis of the effectiveness of turtle mitigation measures in longline fisheries				
		 EB-WP-10: At-sea experiments to develop mitigation measures for seabird bycatch in small boat longline fisheries in the North Pacific 				
		The team did not look further back, but on this basis concluded that each taxa would most likely be consider basis. SG100 is met.	ed on at least a biennial			
		Code de l'Environnement				
References		References given in scoring issue e are not listed again individually here, but can be located by going to the meeting page (https://www.wcpfc.int/meetings/sc12) and selecting the tab 'Ecosystem and Bycatch Mitigation Theme' (and likewise for SC11).				
		CM 2007-01				
		CM 2008-03				
OVER	ALL PER	FORMANCE INDICATOR SCORE:	75			
COND	ITION NU	MBER (if relevant):	6			



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. 				
Scorin	ng Issue	SG 60	SG 80	SG 100		
а	Informati	on adequacy for assessment of impacts				
	Guide post	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	Ν	Ν		
	Justifi cation	Some quantitative information is available from 2007-01 (point 6) meaning the data is insufficient not possible to scale up quantitatively to fleet species. This issue is particularly relevent for the SG 80 is not met.	n observers but this level of implementation (<u>Figu</u> ent to evaluate the impact of the fishery to an ade -level in some cases, where there is also a lack pirds where identification issues mean that interac	<u>ure 15</u>) is below that required by CMM quate level to determine the threat. It is of population-level data for some ETP tions are not recorded to species level.		
b	Informati	on adequacy for management strategy				
	Guide post	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	Ν	Ν		



Justifi cation As set out in 2.3.2, there is a strategy through the CMMs which should work well if implemented; current observer data level insufficient compared to the CMM (2007-01): turtle dehookers and line cutters requirements are not enforced (2008-03). There are to data gaps, nothing is known about post-release mortality of sharks and population-level data are lacking for most of the sharks and other ETP species as well, which would be required for a 'high degree of certainty'. SG80 is not met.					
References Observer data and references in 2.3.1 and 2.3.2					
OVERALL PERFORMANCE INDICATOR SCORE: 60					
COND	CONDITION NUMBER (if relevant): 7				



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.					
Scorin	ng Issue	SG 60	SG 80	SG 100			
а	Commor	hly encountered habitat status					
	Guide post	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	Υ	Y			
	Justifi cation	The longline fishery takes place in deep water and is highly unlikely to interact with benthic features. Lost gear may consist of monofilament and/or hooks and is only likely to continue to fish as long as bait remains on the hooks, but in this fishery, longlines ar reportedly rarely lost, since they incorporate radio beacons and will be retrieved most of the time. SG100 is therefore met.					
b	VME hat	bitat status					
	Guide post	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?	Y	Υ	Y			
	Justifi cation	See above. SG100 is met.					
	Minor habitat status						



C	Guide post		There is eviden unlikely to reduc of the minor hat there would be harm.		that the UoA is highly structure and function ats to a point where rious or irreversible	
	Met?			Y		
	Justifi cation	As above. Met.				
Refer	References Site visit interviews					
OVERALL PERFORMANCE INDICATOR SCORE: 10					100	
CONE	CONDITION NUMBER (if relevant): N/a					



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.			
Scorin	ng Issue	SG 60	SG 80	SG 100	
а	Manager	ment strategy in place			
	Guide post	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	Ν	
	Justifi cation	Considering that this fishery is extremely unl measures should not be required. SGs 60 and aims to manage the impacts of the fishery on ha SG100 is therefore not met.	ikely to impact benthic habitats, the term 'if 80 are therefore met by default. There is, how abitat types (either directly or through ghost fish	necessary' applies here and management vever, no strategy in place which specifically ning), as required by MSC for a score of 100.	
b	Manager	ment strategy evaluation			
	Guide post	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	
	Justifi cation	The 'partial strategy' is the nature of the fishery about the gear type and deployment. SG100 is	(pelagic only); there is therefore high confidence met.	e that it works, based on information directly	



С	Manager	inagement strategy implementation				
	Guide post		There is some quantitative evidence that the measures/partial strategy is being implemented successfully.	There is clear qu the partial stra implemented succ its objective, as o (a).	antitative evidence that tegy/strategy is being cessfully and is achieving putlined in scoring issue	
	Met?		Y	Y		
	Justifi cation	Quantitative evidence such as VMS tracks will	clearly demonstrate no impact on benthic habi	tats. SG100 is met.		
d	Complia	pliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs				
	Guide post	There is qualitative evidence that the UoA complies with its management requirements to protect VMEs.	There is some quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	There is clear qua the UoA complies management requ protection measur other MSC UoAs/ where relevant.	antitative evidence that with both its uirements and with res afforded to VMEs by non-MSC fisheries,	
	Met?	Y	Y	Y		
	Justifi cation	In the absence of interactions with VMEs (see	2.4.1), this issue is met by default. SG100 is m	et.		
Refere	ences	Site visit interviews				
OVERALL PERFORMANCE IN		FORMANCE INDICATOR SCORE:			95	
CONDITION NUMBER (if relevant): N/a			N/a			



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.			
Scorin	ng Issue	SG 60	SG 80	SG 100	
а	Informati	on quality			
	Guide post	The types and distribution of the main habitats are broadly understood . OR If Consequence Spatial Analysis (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	Ν	
	Justifi cation	Knowledge of demersal habitats is not release a statement about 'relevant to the scale and	evant to this fishery, so SG80 is met by defand intensity of the UoA'.	ault. SG100 is not met because it does not include	
b	Informati	on adequacy for assessment of impacts			
	Guide post	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:	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	The physical impacts of the gear on all habitats have been quantified fully.	



		Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.	If CSA is used to score PI 2.4.1 for the UoA: Some quantitative information is available and is adequate to estimate the consequence and spatial attributes of the main habitats.		
	Met?	Y	Y	Y	
	Justifi cation	Since the gear does not interact with habit	ats, the (lack of) physical impacts are clear	SG100 is met.	
с	Monitorir	ng			
	Guide post		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in habit measured.	at distributions over time are
	Met?		Y	Ν	
	Justifi cation	No information is required, so SG80 is me	t by default. SG100 is not met because suc	h measurements ai	e not necessary in this fishery.
References Site visit interviews					
OVERALL PERFORMANCE INDICATOR SCORE:					85
CONDITION NUMBER (if relevant): N/a			N/a		



Evaluation Table for PI 2.5.1 – Ecosystem outcome

PI 2.5.1		The UoA does not cause serious or irrev	ersible harm to the key elements of ecosyste	em structure and fu	unction.
Scorin	ng Issue	SG 60	SG 80	SG 100	
а	Ecosyste	em status			
	Guide post	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 evidenc unlikely to disr underlying ecosys to a point where th irreversible harm.	e that the UoA is highly upt the key elements tem structure and function here would be a serious or
	Met?	Y	Y	N	
	Justifi cation Fisheries inevitably change ecosystems, and the Pacific tuna fisheries are no exception (e.g. see Polovina and Woodworth-Jefcoats, 2 for Hawai'i). At the scale of this UoA, however, it is highly unlikely that the fishery under assessment would lead to irreversible ecosystimpacts; it constitutes a tiny proportion of the catch of the stocks of all target and main bycatch species, and is not considered to have major impact on non-target species (see 2.1.1 and 2.3.1). Fishing pressure in the EEZ is also low, since the EEZ is large and this is only licensed commercial tuna fishery. At a regional scale, the latest stock assessments for albacore and yellowfin (the species we dominate the catch) suggest that both stocks are being maintained above B _{MSY} level. On this basis, it is considered highly unlikely that fishery will disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irrever harm. SG80 is therefore met. There is however limited formal evidence supporting this conclusion, in terms of direct information about French Polynesia EEZ pelagic ecosystem and the impact of longlining upon it. SG100 is thus not met.			Voodworth-Jefcoats, 2013 I to irreversible ecosystem not considered to have any EZ is large and this is the llowfin (the species which red highly unlikely that the be a serious or irreversible irect information about the	
Refere	References Polovina and Woodworth-Jefcoats, 2013; Harley et al., 2015; Davies et al., 2014				
OVER	ALL PER	FORMANCE INDICATOR SCORE:			80
CONDITION NUMBER (if relevant):		N/a			



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.			
Scorin	ng Issue	SG 60	SG 80	SG 100	
а	Manager	ment strategy in place			
	Guide post	There are measures in place, if necessary which take into account the potential impacts of the fishery on key elements of the ecosystem.	There is a partial strategy in place, if necessary, which takes into account available information and is expected to restrain impacts of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a strategy that consists of a plan , in place which contains measures to address all main impacts of the UoA on the ecosystem, and at least some of these measures are in place.	
	Met?	Y	Y	Ν	
	Justifi cation	As is set out in 2.5.1, there is an objective Polynesia (and more widely) are negligible. at a negligible level. This constitutes a 'part so SG100 is not met.	e basis for considering that the impacts of th The fishery is capped at 75 licences; clearly ial strategy', and SG80 met. There is not, how	is fishery on the pelagic ecosystem in French a level which will maintain ecosystem impacts wever, as yet a 'strategy that consists of a plan'	
b	Manager	ment strategy evaluation			
	Guide post	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	Ν	
	Justifi cation	There is confidence that the partial strategy is met. However, 'testing' implies some kind purpose) – SG100 is not met.	will work, based on the footprint of the fishery of ecosystem modelling, which is not availa	/ in the ecosystem, as described in 2.5.1. SG80 ble here (or at least, has not been used for this	
	Manage	ment strategy implementation			



c	Guide post		There is some evidence that the measures/partial strategy is being implemented successfully .	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective as set out in scoring issue (a).
	Met?		Y	Y
	Justifi cation	The partial strategy consists of maintaining catches and discards are also monitored vi met. For SG100, the objective from scoring Outcome 80 level of performance'. It is clear	the fishery impact at a low level; licenses an a observers. There is reasonable confidence issue a is: ' to restrain impacts of the UoA on r that this is being achieved: SG100 is also m	re capped and vessels are monitored by VMS; that levels of IUU are low (see 3.2.3). SG80 is the ecosystem so as to achieve the Ecosystem net.
Refere	ences Logbook and observer data from DRMM			
OVERALL PERFORMANCE INDICATOR SCORE: 85			85	
CONDITION NUMBER (if relevant):				N/a



Evaluation Table for PI 2.5.3 – Ecosystem information

PI 2.5	5.3	There is adequate knowledge of the impacts of the UoA on the ecosystem.			
Scorin	ng Issue	SG 60	SG 80	SG 100	
а	Informati	on quality			
	Guide post	Information is adequate to identify the key elements of the ecosystem.	Information is adequate to broadly understand the key elements of the ecosystem.		
	Met?	Y	Y		
	Justifi cation	There is ongoing work to collect detailed data (e.g. bycatch composition and quantities), acoustics and net sampling of micronekton is thought to be adequate to broadly unders	a on the structure of the Pacific Ocean pe trophic analyses (e.g. stomach contents and zooplankton) and behavioural analy tand the key elements of the ecosystem	elagic ecosystem, e.g. through observer programmes s, stable isotopes), mid-trophic level sampling (e.g. ses (tagging of a range of species). This information . SG80 is met.	
b	Investiga	tion of UoA impacts			
	Guide post	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	Y	
	Justifi cation	Trophic structure of pelagic ecosystems in t based on diet data. The dynamic system m under the influence of both fishing and envi SEAPODYM model to the work of the WCF is facilitated through Project 62 which affiliat et al., 2013). A list of current projects is give been and are being investigated. SG100 is	he Pacific, including the WCPO, has been odel SEAPODYM, is a model developed ronmental effects (Lehodey et al., 2013) PFC Scientific Committee, including its a res the independently funded work on SE en in Lehodey et al. (2013). Main interact met.	en characterised using Ecopath and Ecosim models d for investigating spatial tuna population dynamics, . The continued development and application of the pplication to albacore fisheries in the South Pacific, EAPODYM into the SC's work programme (Lehodey ctions between the fishery and the ecosystem have	



с	Understa	anding of component functions			
	Guide post		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	Υ	
	Justifi cation	As noted above, the ecology of the main sp on their roles in the ecosystem as described ETP) is clearly identified via logbook and ob	ecies in the fishery (target, bycatch and d above. The impact of the UoA on the v pserver data. SG100 is met.	ETP) is relatively well known, with research ongoing arious ecosystem components (target, bycatch and	
d	Informat	ion relevance			
	Guide post		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	Υ	
	Justifi cation	Since the impact of the fishery is measured using reasonably robust data, and the ecosystem is relatively well-studied (including a food web model), the main consequences of the fishery for the ecosystem can be inferred with reasonable confidence. SG100 is met.			
е	Monitoring				
	Guide post		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	Ν	
	Justifi cation	Logbook and observer data is sufficient to o SG80 is met. Since there is not something t met.	detect any changes which might have each at could be formally defined as an eco	cosystem impacts; e.g. changes in rates of bycatch. system management strategy (as yet), SG100 is not	



References	Lehodey et al., 2013; Fitzsimmons, 2011; for the status of individual stocks see references in 1.1.1, 2.1.1 and 2.3.1.			
OVERALL PER	95			
CONDITION NUMBER (if relevant):		N/a		



PRINCIPLE 3

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. 		
Scorin	Scoring Issue SG 60 SG 80 SG 100			SG 100
а	Compati	bility of laws or standards with effective manag	jement	
	Guide post	There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and organised and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and binding procedures governing cooperation with other parties which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	Y	Y	Y
	Justifi cation	French Polynesia has quite a well-developed in 2003 to the Constitution under the Fifth Re- local self-regulation. Within Article 74 of this the Organic Law N° 2004-192 of 17 Februar definitively strengthened the degree of auton (<i>pays d'outre-mer</i> as specified in Article 1 of many areas, including fisheries and other ma	I national legal framework which closely mi public of France (4 October 1958), French Constitution, a new statute, or French Poly y 2004. This Organic Law spells out the ba omy and redefined French Polynesia as an the Organic Law). It gives the government rine resources, and also broadens control o	irrors that of France. Under amendments made Polynesia was allowed wide-ranging powers of ynesian "Constitution", came into force through asic roles and responsibilities of government. It n "oversees country within the French Republic" of French Polynesia executive responsibility for over its Exclusive Economic Zone (EEZ).
		One ministerial decree (<i>Arrêté</i> N° 1914/CM objectives of the Directorate of Marine Reso addresses fishery law with respect to manage of resource management and conservation of and for the creation of value-added product d	of 25 November 2011 (as modified)) sets of urces (DRMM). Although there is not as yo ment actions <i>per se</i> , there are Articles in the units to promote strategies for resource us levelopment assistance.	out the organization, responsibilities, goals and et a specific legal framework which specifically abovementioned decree which specify creation e development, use regulations, data analyses
		Another Environmental "Country Law" (introc 14 April 2016) establishes the implementation use of natural resources) under the authorities Within these Laws is the provision for fisheries	luced as <i>Lois du Pays</i> N° 2016-9 of 25 Feb on of co-managed marine protected area(s as of both the ministries responsible for the as management to be under the aegis of the	oruary 2016 and promulgated as N° 2016-13 of s) (Category VI MPA under IUCN – sustainable environment and for marine natural resources. e DRMM, with a specific mandate to develop a



ministerial decree for a fisheries resources management plan. There are other government agreements such as Deliberation N° 88-183 AT (as modified) of 8 December 1988 which already placed certain regulations on fishing and thus the fishery, in addition to a Deliberation N° 97-32/APF (as modified) of 20 February 1997 relative to regulations concerning the exploitation of living marine resources in territorial waters and the rest of the EEZ of French Polynesia, which bans the practice of purse seine fishing within the EEZ.
Within the "Environmental Code" there are also provisions which; 1) ban the taking (incidental or otherwise) of any sharks; 2) ban the practice of shark finning; 3) establish the EEZ as a shark sanctuary; 4) declare the entire EEZ as a marine mammal sanctuary with rules and regulations for whale-watching and dolphin encounter eco-tourism; 5) declare the entire EEZ as a marine turtle sanctuary also with attendant rules, regulations and penal consequences for transgressions.
There is an established framework for cooperation with other states and territories primarily through French Polynesia's active membership of regional (Secretariat of the Pacific Community (SPC), Pacific Islands Forum (PIF - French Polynesia is however an observer to the Forum Fisheries Agency (FFA)), Secretariat of the Pacific Regional Environmental Programme (SPREP), the Polynesian Leadership Group, and is active but not signatory to the Tokelau Arrangement for the Management of the South Pacific longline fishery) and international (Western and Central Pacific Fishery Commission – WCPFC and InterAmerican Tropical Tuna Commission – IATTC) fisheries management and research organizations. French Polynesia is actually only a member of the French delegation to the IATTC (France is responsible for Clipperton Island and French Polynesia in the IATTC) but provides fishery data to both WCPFC and IATTC through a formal data sharing agreement for catches in the overlap zone in the EEZ. However it has been established and accepted by French Polynesia that only WCPFC Conservation and Management Measures (CMMs) will be binding for their tuna fishery. As noted in Section 2.3.23, the fact that French Polynesia is implementing CMMs from WCPFC rather than Resolutions from IATTC has no bearing on the management of either shared stocks (because management is harmonised between the two organisations) or on main EPO stocks (because management of these stocks is based on management of the purse seine fishery which is prohibited in French Polynesia).
Effective regional cooperation occurs via SPC but not directly via FFA. Through the SPC, regionally (and sub-regionally) supported management initiatives are developed and promoted at the WCPF Commission. Support for management outcomes are provided through: 1) the collection and sharing of scientific data via an in-country logbook and observer programme; 2) regular stock assessments carried out by SPC; 3) the development and consideration of scientific advice, primarily through the Scientific Committee of the WCPF Commission; 4) agreement on matters of common interest between states fishing for albacore and yellowfin, initially at FFA/FFC (French Polynesia is only full member to the FFC but not FFA since September 2016) and then promoted via the full WCPF Commission; and 5) regional MCS initiatives, including a regional VMS and vessel register. While providing for the development of cooperative and compatible regional fisheries management approaches, this framework of cooperation also effectively overcomes the capacity and resource constraints facing the DRMM. Cooperation through SPC and the WCPFC has allowed for the development and to some extent implementation of sustainable management arrangements for the tuna fishery as required under the obligations of UNCLOS Articles 63(1 & 2), 64 and UNFSA Article 8. The work of SPC as the science provider and the Commission as coordinating secretariat provides a strong framework for cooperation as required under UNSFA Article 10 (in reference to RFMOS).
France (and subsequently French Polynesia via Country Law N° 95-1311 of 21 December 1995) ratified UNCLOS II (1982) and the UN Fish Stocks Agreement, during which the FAO Code of Conduct for Responsible Fisheries (1995), was unanimously adopted, including the Compliance Agreement. These treaties/agreements are consistent with the current international fisheries laws and standards for the



		 management of highly migratory species and ecosystems. Binding legislation relating to comprehensive international cooperation for the management of the albacore and yellowfin stocks exists through the WCPF (the Honolulu) Convention and the associated CMMs developed by the Commission. As a participating territory to the Honolulu Convention, French Polynesia has thus committed adherence to, but as yet does not have a written codified process for giving legal effect to CMMs developed at the Commission in French Polynesia. Through cooperation, a range of Commission committees and processes have been formed to deliver the outcomes under Article 10 of UNSFA and the Convention, including CMMs. Allocation of TACs (quotas) or the total level of fishing effort, as envisaged under Article 10.3 of the Convention, has been partially achieved for some tuna species. The same framework provides mechanisms for cooperation for Principle 2 species (e.g. CMMs for other migratory fish species, sharks, turtles <i>etc.</i>), as well as for research on issues concerning ecosystems (via SPC and the Scientific Committee of WCPFC). On the basis of the above, the team concluded that there is an effective local level system and effective binding procedures for regional cooperation. Such that SG100 is met 				
b	Resoluti	on of disputes				
	Guide post	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?	Y	Y	Ν		
	Justifi cation	Local disputes relating to fishery and compliance issues can be dealt with through the provisions of the French Polynesian vessel permiting legislation and the calling to order of the "Consultative Commission" (created through Government Deliberation N° 97-32/APF of February 20, 1997 (as modified) and Ministerial Decree N° 557/CM of June 6, 1997 (as modified)). These deal specifically with disputes or infractions as a result of possible non-compliance with the conditions set out in the government issuance of the fishing licenses for each individual vessel at an administrative and legal level through the DRMM as adjudicating body. There may also be the convening of a purely "Disciplinary Commission" when fines and other sanctions may be handled. During the hearings, statements, arguments <i>etc.</i> from contesting parties are taken and in most cases there is an amical resolution found. There will normally be written records or minutes (<i>procès-verbaux</i>) available for such meetings. In the past, there have been threats of strikes or actual blockage of the port entrance by members of the various professional fishing-associated "unions" or syndicates (local nomenclature). But even in these rather extreme cases there was a successful resolution as compromise was found. Thus, the dispute resolution mechanism is somewhat formal and somewhat codified but well within the context of the UoA. This fishery is after all rather small and cohesive, such that everyone knows each other. At the regional level, the WCPFC dispute settlement mechanism is set out under Part IX Article 31 of the Honolulu Convention as also laid out in Annex VIII of UNSFA and Part XV of UNCLOS. Annex II of the WCPF Convention establishes the authority to form a Review Panel to review decisions made by the Commission and to settle disputes among members of the Commission. The dispute settlement				



		mechanism outlined in the Convention would allow for a transparent process to occur, although reviews of Commission decisions, as envisaged under Articles 20, 31 and Annex II of the WCPF Convention have yet to be tested and proven effective.				
		On the basis of the above, SG80 is met for both local and regional dispute resolution systems. SG100 is met for the local legal system but not for the regional system; the overall score is therefore 80.				
C	Respect	for rights				
	Guide post	The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.		
	Met?	Y	Y	Ν		
	Justifi cation	Under Article 1 of the French Declaration of Human and Civic Rights of 26 August 1789 "men are born and remain free and equal in rights". In addition, in accordance with the French Constitutional statute of June 3rd 1958 (which, as seen above forms the legal basis for the Organic Law of French Polynesia), the equality of all citizens before the law, without distinction of origin, race or religion shall be ensured. Statutes shall promote equal access by women and men to elective offices and posts as well as to professional and social positions. We also should not ignore the maxim of the Republic - "Liberty, Equality, Fraternity". From the above it is thus "mandated", if not explicitly codified, that artisanal reef and lagoon, coastal and longline fishers all have the same rights to subsidies, assistance, support <i>etc.</i> providing they apply for the appropriate professional fisher permits (<i>Licences de pêch</i> for coastal and longline activites and <i>cartes CAPL (Chambre de l'Agriculture et de la Pêche Laonaire</i> for reef/lagoon fishing)) and as long as they remain in compliance with the rules and regulations of same				
	DRMM deals not just with the longline fleet but also the small vessel coastal fisheries. Since 1981, when it initiated an a programme, it has deployed at total of close to 600 anchored FADs (up to 2015) for small boat fishers. And currently there are anchored FADs in place throughout the archipelagos of French Polynesia. Therefore, there is definitely observed equal rights e but since a formal management system has yet to be codified into local law, it may seem somewhat unclear if the "formally element of SG100 can be justified in terms of the above.					
	However, the WCPF Convention does provide for recognition of the interests of small scale and artisanal fishers within the framework for sustainability in the WCPF Convention. The Convention further requires that the needs of SIDs, territories and poss and coastal communities dependent on stocks including those taken in the fishery be recognized in the allocation of catch or ef 10 (3)). Further, Article 30 of the Convention provides for recognition of the interests of small scale and artisanal fishers within the management framework in the WCPF Convention. However, to what extent French Polynesia can claim to still be a "small developing state" or SIDS is up for question and interpretation.			Il scale and artisanal fishers within the overall at the needs of SIDs, territories and possessions cognized in the allocation of catch or effort (Art nall scale and artisanal fishers within the overall Polynesia can claim to still be a "small island		
		Therefore, on the basis of the above, SG100	is probably not met but SG 80 is.			



CONDITION NU	N/a		
OVERALL PER	85		
	UN Fish Stocks Agreement (UNFSA) - The United Nations Agreement for the Implementation of the Provi Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Highly Migratory Fish Stocks (in force as from 11 December 2001)	sions of the United Nations Straddling Fish Stocks and	
	The United Nations Convention on the Law of the Sea (UNCLOS II - 1982),		
References	French Constitution for the Fifth Republic (1958) – English translation,		
References	Fishing-associated Unions in French Polynesia: 1) Syndicat de pêcheurs professionnel polynésiens, 2) Syndicat des pêches professionnelles de haute mer de Polynésie française, 3) Syndicat RAVA'AI RAU – Syndicat des armateurs pêcheurs professionnels hauturiers côtiers et lagonaires, 4) Syndicat des pêcheurs professionnels de la Polynésie française à moteur essence.		
	FAO Code of Conduct for Responsible Fisheries (1995),		
	Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Cent Honolulu Convention 2000 creating the WCPFC),	ral Pacific Ocean (WCPF or	



Evaluation Table for PI 3.1.2 – Consultation, roles and responsibilities

		The management system has effective consultation processes that are open to interested and affected parties.			
PI 3.1.2		The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties			
Scorin	ng Issue	SG 60	SG 80	SG 100	
а	Roles an	d responsibilities			
	Guide post	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood .	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.	
	Met?	Y	Y	Ν	
	Justifi cation	As previously cited, ministerial decree (Arrêté N° 1914/CM of 25 November 2011 (as modified)) sets out the organization, responsibilites, goals and objectives of the Directorate of Marine Resources (DRMM). Articles therein specify that resource management and conservation units shall be instituted to promote strategies for resource use development, use regulations, data analysis and for the creation of value-added product development assistance.			
	The Polynesian Directorate of Marine Affairs (DPAM) is mandated under Ministerial Decree N° 1512/CM of 8 Novem other roles issue licences for navigation (<i>permis de navigation</i>) upon passing satisfactory security inspection for the v the DRMM issue a vessel its fishing licence. On the other hand, the French State Marine Affairs Service (SAM or coll French Polynesia has the role of "fisheries police", in cooperation with French armed services assets here, within th foreign vessels in port. Among other responsibilities are annual health and safety inspections of fishing vessels a information regarding the need for compliance with the International Convention for the Prevention of Pollution from 1975 (as amended)).				
		There is also a Directorate of the Environme February 2003. Although there are some over and other protected species, the division of re of personalities.	ent (DIREN) whose missions are defined erlaps of their goals and missions with tho sponsibilities is very well defined and confl	by Government Decision N° 2003-35/APF of 27 use of the DRMM, for instance in relation to turtles licts, if any are perceived, stem mostly from a clash	
of personalities. However, there are some gaps in understanding of who should do what in French Polynesia with respect to transshipment of products by foreign vessels, fishing outside of the EEZ of course, in its international port in a duty free-designated zone – s be involved, should someone from SAM, someone from DRMM? It is not clear that much inspection of the cargo being to occurring and this may present a lapse in French Polynesia's full implementation of FAO Port State Measures to combat Ille and unregulated (IUU) fishing. (European Council Regulation (EC) N°1005/2008 of 29 September 2008) to which Fre			esia with respect to transshipment of frozen fishery t in a duty free-designated zone – should Customs such inspection of the cargo being transshipped is 9 Port State Measures to combat Illegal, unreported 29 September 2008) to which France signed its		



		approval in 2016. The WCPFC has also adopt	ed the Port State Measures (see TCC12 2	016-22). In relation to this fishery this is a tangential		
		At the regional level, the WCPF Convention Part III Articles 9 through 16, Part IV Article 23, Part V Article 24 and Part XII Article 44 provide information on the functions, roles and responsibilities of member states and participating territories, and the committees formed under Commission control (<i>e.g.</i> Scientific Committee and Technical Compliance Committee). The Commission and its associated committees have clear operating procedures and terms of reference and the roles and responsibilities of members and non-members are clearly defined in the Convention, in the Rules of Procedure and in relevant CMMs. Since French Polynesia is a participating territory to the Commission, the things they can and cannot do are thusly very well spelled out. And as noted above 3.1.1, there is no conflict between French Polynesia's requirements and obligations as regards WCPFC versus those for the IATTC.				
b	Consulta	tion processes				
	Guide post	The management system includes consultation processes that obtain relevant information from the main affected parties, including local knowledge, to inform the management system.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information and explains how it is used or not used .		
	Met?	Y	Y	Ν		
	Justifi cation	The DRMM provides a range of opportunities for affected parties to have input into the management system, including through public notices in the press and consultation with stakeholders; these are often driven by the stakeholders themselves. Thus, there is evidence that the Directorate is willing to engage on issues of concern to stakeholders. And while the DRMM does consult with stakeholders on a range of issues, often through the formal Consultative Commission format, there is evidence that this consultation process represents both the longline industry and coastal fishery interests. As stated above in 3.1.1(b) this Consultative Commission is obligatory and must see and accept relevant information for anything that regards licenses and sanctions. Such meetings are arranged as and when required and not as yet on a regular basis, but no measure would ever go forward for adoption into force of action or law without industry agreement Environmental NGOs are invited to attend and provide input, depending on the subject matter. In addition, there are informal participator structures/meeting arranged through DRM to address periodic concerns.				
		Feedback from stakeholders, notably Dr. Jérôme Petit (Pew, see <u>Table 14</u>) and Dr. Marc Taquet (IRD, see <u>Table 14</u>), confirms that the current consultation processes organized by DRM are open and transparent. There are also regular meetings with the Produce Organisation (comprised exclusively longline fishing vessel owners/operators (vessels over 14 m) and organized as a <i>Cooperative Maritime des Producteurs de Pêche Hauturière de Polynésie française</i> – registered 4 December 2008) as well as an Interprofession Committee (created through Article 3 of Ministerial Decree N° 1491/CM of 26 August 2010) with representatives from both the vesse owners and the fish wholesalers/exporters. This <i>Comité Interprofession</i> is a bit contentious however since some of the wholesalers are also owners of a number of individual vessels in the fleet and at the moment it is without a president. Nonetheless, minutes of both these				



		meetings from the past are available for review. Overall there appears to be a good working relationship among the DRMM and the various stakeholders involved in the longline fishing industry.				
		It should be noted here that a draft fishery management plan is in preparation at this writing; it is not clear at the moment how this will de with consultative processes, but as of now there is no formal framework for consultation and for management response to consultation Consultations with the DIREN should obviously continue especially as regards endangered, threatened and protected species (ETPs) ar potential interactions with the longline fishing industry. The year 2017 marks the final evaluation date for the DIREN Action Plan (2012) 2017) for emblematic marine species (turtles, marine mammals, sharks) and DRMM has been one of the working partners in the process Therefore goals and objectives in this action plan should logically align, where necessary, with those of the fishery. So, in summary, there still seems to be an issue of limited transparency regarding key political strategy and the overarching objectives. This may hopefully be addressed in the near future with the completion of a "White Paper for a Roadmap to Fisheries Development in French Polynesia (<i>Elaboration du Schéma Directeur de Développement de la Pêche Hauturière de la Polynésie française</i>) which has been let out to contrate and 2016.				
		At the regional/international level, there are enaccept information from members and cooper CCMs. This information is regularly sought from active in assisting and facilitating the regular Commission secretariat and scientific provide states in order to inform fisheries management of WCPFC meetings, which detail the decision Based on the above SG 80 is met for both low level because under the existing framework	extensive formal and informal consultation erating non-members pertaining to relevar om CCMs via Part 1 and 2 reporting (to the ar and timely provision of fisheries data ers such as SPC. The Commission actively it decisions and the formulation of CMMs. T n-making process and are readily accessi ocal and regional systems. SG100 is met there is not always a clear link between	processes at the WCPFC that regularly seek and the fisheries, including compliance information from a Commission) processes. The Commission is thus and information in order to be assessed by the y uses information from the fishery and its member this is demonstrated through reports and outcomes ble online. at the regional level, but not fully met at the local the consultation process and high-level decision-		
6	Participa	making in the fishery – i.e. it is not always exp tion	plained how inputs from consultation are u	ised in this context.		
C	Guide		The consultation process provides	The consultation process provides opportunity		
	post		opportunity for all interested and affected parties to be involved.	and encouragement for all interested and affected parties to be involved, and facilitates their effective engagement.		
	Met?		Y	Y		
	Justifi cation	The assessment team came away with the in the facilities and sometimes even incentives all affected parties to be involved in consult enabling fishers to attend, meetings are as of ashore and organized within the fishing port so At the regional level, the WCPEC Secretaria	mpression that the DRMM is very open. T to attend (breakfast is available after the ation through submissions to the DRMM ten as possible scheduled for "down times to that they are as close as possible to the tracilitates effective engagement by stak	hey work hard to get people to meetings, provide meeting!). There is also an implicit opportunity for on various issues at any time. When it involves " in fishing activity, when more crew members are ir workplace.		
		meetings are comprehensive and logistic and	I financial support is provided to CCMs and	d participating territories to ensure attendance and		



		meaningful involvement and interaction in the cooperative management of fisheries in the Western and C And, observers can attend WCPFC meetings and are afforded the opportunity to make public statem Additional services may be provided through the FFA/FFC.	Central Pacific Ocean (WCPO). ents and written submissions.	
		Based on the above SG100 is met.		
		FAO Agreement on port state measures to prevent, deter and eliminate illegal, unreported and unregulated fishing (as of 22 November 2009)		
		Jérôme Petit – Director, PEW Charitable Trusts French Polynesia (2017) - pers. comm.		
Refere	ences	Marc Taquet – Director, Institute de Recherche pour le Développement (IRD) de Polynésie française (2017) – pers. comm.		
		WCPFC12 and 13, SC11 and 12 and TCC11 and 12 meeting records		
		WCPFC Rules of Procedure		
		WCPFC documents can be accessed at their website http://www.wcpfc.int/meetings		
OVERALL PERFORMANCE INDICATOR SCORE: 85			85	
CONDITION NUMBER (if relevant): N/a			N/a	



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.			
Scorin	ig Issue	SG 60	SG 80	SG 100	
а	Objective				
	Guide post	Long-term objectives to guide decision- making, consistent with the MSC fisheries standard and the precautionary approach, are implicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach are explicit within management policy.	Clear long-term objectives that guide decision-making, consistent with MSC fisheries standard and the precautionary approach, are explicit within and required by management policy.	
	Met?	Y	Y	Р	
	Justifi cation	When considering long term objectives and codified into law nor that the "White Paper for term objectives as explicit within the terms of thas the objective to "ensure through effectives stocks in the WCPO in accordance with the Convention then provides principles and meas 5(c) requires the Commission to apply the probe given effect, including through the applicat consistent with MSC principles and objective at which their reproduction may become series Under Principle 1 (P1 - Target Species), reg (YFT) WCPFC and IATTC stock objectives in is less than or equal to the fishing mortality at However, FP total annual YFT catches are recatch of YFT in the "IATTC" region the recerbiomass are estimated to also be around that Kobe plots. Depending on which LTRs are ut MSY for the total stock size and also very slig South Pacific albacore tuna (SPALB) the stoc of 2000-2005 levels. However, if effort is exameasure of overall effort and thus SG 100 c measures which French Polynesia are subjectives.	in light of the fact that neither a local fish or Fishery Development" has been complete he WCPF Convention language. For examp we management, the long-term conservation 1982 Convention and Agreement (UNCLOS asures for achieving this conservation and r ecautionary approach in decision-making ar- tion of the guidelines set out in Annex II of s in specifying long term objectives of "main busly threatened". gional level WCPFC objectives are therefore nust be considered. First under WCPFC CM t the calculated maximum sustainable yield normally only approximately 20% from the t level. But there is some uncertainty concer sed, the eastern tropical Pacific stock of YF ht overfishing is occurring above MSY comp k objective as written under CMM2015-02, t pressed simply by the number of vessels annot be met. It should be remembered ho ct to are issued through the WCPFC. Here, t	ery management plan has been validated and ed, we can only base this assessment on long- de, Part I Article 2 specifies that the Commission on and sustainable use of highly migratory fish S and FSA respectively)". Part II Article 5 of the management objective. More specifically Article and Article 6 outlines the means by which this will the FSA. Part III Article 10 of the Convention is intaining or restoring populationsabove levels re relevant for SP albacore. For yellowfin tuna M2016-01 it is shown that the fishing mortality for the stock (F < F _{MSY}), which meets SG 100. WCPFC overlap zone west of 150° W. For the MSY level, and the recent levels of spawning ming the stock status from interpretations of the FT is either being fished at nearly or just above pared to the estimated spawning stock size. For that fishing effort was not to exceed the average targeting SPALB, then this is not a very good owever that the conservation and management only SG 80 is met for albacore and probably for	



	 Under Principle 2 (P2 – Ecosystem), there are several WCPFC CMMs which apply to French Polynesia, marine turtles, CMM2013-08 for silky and oceanic whitetip sharks, CMM2012-07/2013-03 for seabirds. CMM2016-01 stipulates the fishing mortality must be less than or equal to mortality at a calculated maximus stock (F < F_{MSY}) within a specified recovery time to a limit reference point. It will be important to examine not the stock trajectory of rebuilding. Since French Polynesia has a robust logbook programme and onboard obset target species and protected/sanctuary species interactions are available. Under Part II Article 5(d) of the WC and measures for conservation and management – the impact of fishing on non-target species, and spe ecosystem or dependent upon or associated with the target stocks shall be assessed. Some of these do points for stock status or interaction rates established under the WCPFC. Thus SG100 is met for some el sharks and other "sanctuary" species, but as in P1, SPALB do not meet SG 100. The team considered that SG100 was only partially met and a score of 90 has been awarded. 	<i>inter alia</i> : CMM2008-03 for And for bigeye tuna (BET) um sustainable yield for the only the timeframe but also ervers, data on primary non- CPF Convention – Principles cies belonging to the same not yet have limit reference ements such as YFT, BET,			
References	References WCPFC Convention, CMMs				
OVERALL PERFORMANCE INDICATOR SCORE: 90					
CONDITION NUMBER (if relevant): N/a					



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.			
Scorin	ig Issue	SG 60	SG 80	SG 100	
а	Objective	es la			
	Guide post	Objectives , which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are implicit within the fishery-specific management system.	Short and long-term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.	Well defined and measurable short and long-term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.	
	Met?	Y	Ν	Ν	
	Justifi cation	French Polynesia fully integrated into the Honolulu Convention of 2000 as a participating territory of WCPFC and has had this charter translated into French. Thus, fishery-specific management objectives are, for the time being, at least implicit for French Polynesia's management policy. There are certainly some clear objectives as expressed by ministerial decrees which have created a shark sanctuary, a whale sanctuary and a turtle sanctuary for the entire EEZ, set into law under the Code of the Environment. And under DRMM directive, the government has accepted a 75 vessel cap (implementation of CMM2015-02) for fishing to the south of 20°S. So in this case at least SG 60 is met; however because translating CMMs have yet to be transposed into French Polynesia's legislation (although they are respected in practice according to the Part 1 report; 2016), they are still only implicit.			
In addition, objectives in terms of fleet management remain unclear, notwithstanding the yet-to-be-completed fishers. Paper". At this point in time it is not known whether the de facto cap on 75 vessel licenses will remain, since this recurrent CMM is only required for fishing south of 20°S (and targeting albacore). Since there are some aspirations to catches, by a fleet which is already highly subsidized, this situation is not explicit. It should however be emphase current management regime the 75 vessel cap does still apply. Fishing licenses for the domestic vessels in the UoA life of the vessel, presuming it does not change property and clears its annual security visit. Any change of property of to any vessel is subject to a re-licensing procedure. Currently, French Polynesia has not limited the number of don authorized to operate in the entirety of its EEZ. Some "political objectives" of catches of 13,000 tonnes of tuna is unless coastal fisheries which target more skipjack and yellowfin tunas, mahi mahi and some wahoo and really not in this estimation.			t-to-be-completed fishery development "White s will remain, since this requirement under the e are some aspirations to increase total annual uld however be emphasized that under the nestic vessels in the UoA are delivered for the Any change of property or major modifications mited the number of domestic coastal vessels 13,000 tonnes of tuna are not very realistic, me wahoo and really not SPALB, are included		
	Therefore, no part of SG80 is met since objectives are not explicit either in relation to translation of WCPFC objectives into local polic regulation, or in relation to local-level objectives for the eventual size of French Polynesian fleet.			n fleet.	
Refere	ences	Site visit interviews			



OVERALL PERFORMANCE INDICATOR SCORE:	60
CONDITION NUMBER (if relevant):	8



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 r	las an appropriate approach to actual dispu	tes in the fishery.		
Scorin	g Issue	SG 60	SG 80	SG 100		
а	Decision	-making processes				
	Guide	There are some decision-making processes	There are established decision-making			
	post	in place that result in measures and	processes that result in measures and			
		strategies to achieve the fishery-specific	strategies to achieve the fishery-specific			
	Maria	objectives.	objectives.			
	Met?	Y	Y			
	Justifi	The French Polynesian fishery management	system, as is, has well-defined roles and respo	nsibilities and is very clear on how decisions		
	cation	are made. The problem arises because fishe	ry-specific objectives are not clearly spelled ou	t and as such it is not clear which decisions		
		should in fact be made. However, this aspect has already been scored under 3.2.1 above. Thus, once objectives have been made clear				
		draft local fishery management plan, which s	should normally be a Ministerial Decree (an A_i	<i>rété</i>) and will be incorporated as actionable		
		under the terms and conditions of the pre-ex	isting Environmental Code, which has the pow	ver of a "Country Law" (<i>Loi du pays</i>), will be		
		done through the following process. The mini	ster presents the draft document as an agenda	item for the Council of Ministers, with all the		
		necessary background documentation and le	egal arguments to justify the promulgation of su	uch a decree, which also then has the force		
		of law. This Council is called to order by the	President every Wednesday morning. But be	fore the minister presents said draft, it has		
		already gone through legal scrutiny by the	lawyer(s) at the DRMM and has been vetted	through affected stakeholders and others		
		draft that he will put forward to the entire Cou	ncil.	minister normally give his validation of the		
		The decision-making processes at the regional/international level are well established and documented. Decision-making at the				
		Commission is by consensus and if consensus cannot be reached, voting grounds for appealing decisions, conciliation and review are				
		all part of the established decision-making process, as described in Part 3 Section 6 Article 20 of the WCPFC Convention. Note however				
		that participating territories (<i>i.e.</i> French Polyn	esia) do not have a vote in this situation.			
		In this case SG 80 is considered to be met.				
b	Respons	siveness of decision-making processes				
	Guide	Decision-making processes respond to	Decision-making processes respond to	Decision-making processes respond to all		
	post	serious issues identified in relevant	serious and other important issues	issues identified in relevant research,		
		research, monitoring, evaluation and	identified in relevant research, monitoring,	monitoring, evaluation and consultation, in		
		consultation, in a transparent, timely and	transparent timely and adaptive mapper	a transparent, timely and adaptive manner		
			i i anoparent, inneny anu auaptive manner			


	adaptive manner and take some account of the wider implications of decisions.	and take account of the wider implications of decisions.	and take account of the wider implications of decisions.
Met?	Y	Ν	Ν
Justifi cation WCPFC CMMs are currently incorporated into the existing management system in practice even though there is not mechanism for incorporating them formally into legislation at this time. Local processes have correctly responded to the issue in the relevant CMMs, such as the 75 albacore targeting vessel cap for fishing south of 20°S and acknowledging the aspirat SIDS) BET catch limit of 2000 tonnes (maximum catch of 800 tonnes in 2015). Given an entire French Polynesian EEZ 5,000,000 km ² fishing pressure can be considered fairly low, with only 61 active vessels in 2015 and 59 in 2016, down from a of 75 in 2004. Therefore, there really are not a lot of important P1 issues that need to be dealt with here, other than those und in the regional/international considerations. It is more likely for French Polynesia that P2 issues are more important. And the already been outlined in 3.1.1(a) above with the institutional creation of sanctuaries for sharks, turtles <i>etc.</i> In addition, all codified, the use of circle hooks (perhaps still some use of tuna hooks) and absolutely no wire traces is now the norm for the end fleet. And at the moment there are neither WCPFC stock assessments nor LRPs for such ETP species interacting with fishin The management system therefore does provides some evidence that is consistent with achieving the outcomes expressed perinciples 1 and 2		Actice even though there is not a codified e correctly responded to the issues identified S and acknowledging the aspiration al (as a in entire French Polynesian EEZ of around 2015 and 59 in 2016, down from a maximum at with here, other than those under WCPFC ssues are more important. And these have sharks, turtles <i>etc.</i> In addition, although not e traces is now the norm for the entire fishing TP species interacting with fishing activities. achieving the outcomes expressed by MSC	
	Therefore, based on the above SG 80 is met Serious issues in the fishery are generally ide through decisions taken under local fisherie Therefore, bigeye overfishing is being addre CMM2015-01 by both LL and purse seine sec catch rates have been declining consistently points. The team considered that this is not a not occurring (see PI 1.1.1). Nonetheless, a 0 projections suggest that current catch and eff that it would be better to act before the end o not responded in that CMM 2015-02, in whic within the WCPF Convention area has not be 06 (harvest strategy) has not been respected for to this issue by defining a more appropriate h There is some concern that without an effe	for French Polynesia. entified by SPC stock assessments and other as legislation, such as the overfishing and su essed since stock status does seem to have ctors. On the other hand, although the SPALB s for several years, and the stock is below poten 'serious' issue in as much as stock status still CPUE decline is an important issue for many C ort levels are unsustainable (see 1.2.1 and 1.2. f 2017 (front load) than down the line. But so fa ch the primary measure to control catch and e een effective in constraining effort on a regional for SPALB (see 1.2.1). The decision-making pro arvest strategy for albacore, which clearly has ctive control on effort and with the potential	reports at the regional level, and addressed spected overfished, status of bigeye tuna. responded positively to implementation of stock is fine from the biological point of view, tial candidate bio-economic target reference shows it is not overfished and overfishing is CMs, including this fishery. SPC status quo 2). An SPC bio-economic analysis suggests ar the WCPFC decision-making process has effort (south of 20°S) in the albacore fishery level. The workplan agreed for CMM 2014- ocess should demonstrate that it can respond not happened yet. for the upcoming "White Paper" to contain
	expansionist plans and continued subsidies, construction for the French Polynesian fleet, on longline licenses in place (i.e. the historical therefore needs to be seen in this context. I expansion of the longline fleet, with potential surveillance (pending the successful outcome	the most significant of which are payments to o P1 and P2 outcomes may become adversely high of 75), with current numbers being well be Depending on the implementation of the White consequences for unsustainable fishing at P1 e of this evaluation)).	offset fuel costs and tax subsidies for vessel impacted. Currently, there is a <i>de facto</i> limit slow that (59 in 2016). The issue of subsidies Paper, and to what extent this leads to an and P2 level will need to be considered at



		SG60 is met for both management systems. SG 80 is met for French Polynesia, where the management system is precautionary, but is not met for WCPFC, in relation to decision-making for SP albacore catch rates (not yet a 'serious' issue because of the stock status, but nevertheless an 'important' issue).			
C	Use of precautionary approach				
	Guide post		Decision-making processes use the precautionary approach and are based on best available information.		
	Met?		Y		
	Justifi cation	The fishery, which is executed only within the EEZ of French Polynesia, can be characterized as exerting relatively low fishing pressure. There are no charters (demise or otherwise), no issuance of fishing permits to any foreign nation, no purse seine fishing and at this writing no joint fishing ventures. Thus, as practiced, the management of the SPALB and YFT fishery can easily be characterized as precautionary, especially relative to the rest of the South Pacific. As already examined in above sections, French Polynesia is a participating territory to the Honolulu (2000) Convention, signed UNCLOS II and thus also adheres to FSA. WCPFC Convention Article 5(c) requires the Commission to apply the precautionary approach in decision-making and Article 6 requires the application of the precautionary approach and use of a Scientific Committee to ensure that the Commission obtains the best scientific information available for its consideration and decision-making. Based on the above the SG 80 is met.			
d	Account	ability and transparency of management system	n and decision-making process		
	Guide post	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.	
	Met?	Y	Y	Ν	
	Justifi cation	As repeatedly mentioned already, at time management actions within the system as downloadable) for not only catch and other s related activities within the purview of DRM newsletter articles of general interest and als Part 1 Country Report – the formal annual "f	of writing there is no codified local fishery practiced. There are annual statistical repor statistics for the longline fleet, but also for the M. The DRMM has an easily accessible web so specific to the "high seas" longline fishing s ishery performance" report to WCPFC – which	management plan, but there are certainly ts/bulletins available from DRMM (internet coastal fisheries and other marine resource site with updated and archived news and ector. There is also the requirement for the is publicly available. These reports usually	



OVER	OVERALL PERFORMANCE INDICATOR SCORE: 75			75		
	Western and Central Pacific Fisheries Commission Tuna Fisheries Yearbook 2015					
Reter	ences	Summary reports of the 12th and 13th Meeting of the WCPFC and 11th and 12th Meetings of the WCPFC Scientific and Technical and Compliance Committees				
Defense		Oceanic Fisheries Programme, SPC				
	•	DRM internet site - http://www.peche.pf				
		Based upon the above SG 100 is met.				
	Justifi cation	Within the local system, the management authority (DRMM) as well as the Ministry/Minister charged with marine resources, there definitely are well-established consultation processes and where necessary, compromise is found with affected stakeholders. Usually the threat of a strike makes coming to a compromise a judicious option in any case. As determined through the assessment team's discussions with the authorities and stakeholders, there has never been a legal challenge within the fishery (except for an enforcement related perhaps 3 incidents when a vessel may have fished marginally outside the limit of the EEZ – not really a violation of laws per se but more a matter of transgression of fishing licence conditions – captains were not STCW-95 or -F certified).				
	Met?	Y	Y	Y		
	Guide post	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 proactively to av rapidly implemen arising from legal o	system or fishery acts roid legal disputes or nts judicial decisions challenges.	
е	Approac	h to disputes				
		news/press releases and/or meetings held, especially if something goes very well, but notably if something goes very wrong in the fishery. Thus, there is not really a sense that there exists any sort of "formal reporting" in relation to explaining how the management system responds to things, but the requirement by WCPFC for timely annual Part 1 reports is somewhat in this "formal reporting" vein. The assessment team deems that SG 80 is met but that SG 100 is not fully met				
	contain quite comprehensive information and statistics for the fishery over the last year. Within these reports, explanations for certain trends and observations are provided but the information has no formalized method of dissemination, although there are spontaneous					



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.		
Scorin	g Issue	SG 60	SG 80	SG 100
а	MCS imp	blementation		
	Guide post	Monitoring, control and surveillance mechanisms exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	Y	Y	Y
	Justifi cation	tifi The MCS implementation in French Polynesia is fairly comprehensive. Under fishing licensee terms and conditions it is obligatory for even longline vessel to have an approved and operational VMS on board while at sea. These are obviously in the regional WCPFC register, are vessel IMOs (when applicable) or other authorized identifications. The only question may be that at-sea observer coverage has be consistently quite low (< 5 % since 2011) (see Figure 15) and below the minimum level prescribed by WCPFC. However, it is to be no that observers are not part of the enforcement system.		
		As for the surveillance aspect, here is a Military in French Polynesia:	summary of the three-pronged status of the monitor	ing strategy as prosecuted by the French
		1. analyses by an Inter-administration Center (under the direction of SAM housed within the French Central Military Command FP);		
		2. via satellite surveillance ("TRIMARAN"	contract with the Navy);	
		3. missions are for surveillance and at-sea	a interventions by Military aircraft assets, Navy and C	Coast Guard vessel assets.
		Surveillance assets being strengthened by	y:	
		1. the continuation of a Common Maritime	Forces Centre (CMC) for FP being confirmed;	
		2. further development of satellite surveilla	ance technologies;	
		This approach has been effective such that foreign fishing fleets have been kept outside the EEZ to a very large extent and France controls compliance with WCPEC rules and regulations at the EEZ houndary. In 2015:		
		a. there were 248 foreign fishing vessel ov	verflights from 47 Gardian jet aircraft surveillance mis	sions;
		b. there were 7 "fishing police" operations representing 52 days at sea during which 16 vessels were inspected;		



c. from which 7 contraventions were established and notified to the flag States, corresponding to 10 violations of the rules laid down by the WCPFC (IUU or other). Aircraft surveillance missions conducted in 2015 represented an investment of over \$5.6 million USD for the French Navy.
In 2016 there were a further 74 surveillance missions totaling 451 hours contributing to control of the EEZ by French Armed Forces aircraft assets, of which 47 flights were dedicated to fisheries surveillance, during which:
a. there were 274 fishing vessel overflights;
b. there were also 80 ship sorties with 5109 sea-hours contributing to surveillance of the EEZ by French Naval vessel assets;
c. resulting in 5 contraventions being established (apparently not IUU but other – see TCC12 report) and notified to the flag States for violations to the rules laid down by the WCPFC.
The MCS system contains all the elements required for a comprehensive system (<i>i.e.</i> vessel verification, port and at-sea inspection, observers, VMS, cross-checking of all the data to ensure full coverage and consistency), which operates at the international, regional and national levels, Further, the system has extensive coverage, independence in terms of reporting through FFA and WCPFC and a range of internal checks and balances.
At the international (WCPFC) level, a wide range of CMMSs have been agreed to and "implemented" but not yet transposed and codified into local (in French Polynesia) legislation. These include the following measures:
 WCPFC Record of Fishing Vessels and Authorizations to Fish (CMM 2013-10)
 Specifications for the Marking and Identification of Fishing Vessels (CMM 2004-03)
• Boarding and Inspection Procedures consistent with Articles 21 & 22 of the United National Fish Stocks Agreement (CMM 2006-08)
Regional Observer Programme (CMM 2007-01) became operational on 31 December 2008;
 Centralized Vessel Monitoring System (Commission VMS) activated on 1 April 2009 (CMM 2011-02)
Prohibition on use of large-scale driftnets (CMM 2008-04)
Regulation on Transshipment (CMM 2009-06)
WCPFC IUU List (CMM 2010-06)
Compliance Monitoring Scheme (CMM 2013-02)
 Standards, Specifications and Procedures for the Record of Fishing Vessels (CMM 2013-03)
Conservation and Management Measure for WCPFC Implementation of a Unique Vessel Identifier (UVI) (CMM 2013-04)
While it is not directly DRMM or the French Polynesian government which conducts surveillance, there obviously is very close collaboration and therefore SG 100 is considered to be met.



Sanctions				
	Guide post	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.
	Met?	Y	Y	Y
	Justifi cation	DRMM staff are confident that the MCS sy that LL vessels have been extensively in finding. A range of sanctions applied to ve there is evidence that they are being appli fishing industry "Consultative Commission 23 June 2014 (Letter of Convocation N° 08 were brought before the Commission for s and 5 instances where the licensed LL fis evidence was provided by DRMM from Explanations for the breaches in each case for 1 month during the height of fishing se also avoided potentially heavier sanction for France in French Polynesia, without th owners of the 5 LL vessel for the reasons be repaired and proven to be in good work Thus, there is evidence of sanctions being are being applied inconsistently. There is of regulation can be a common outcome i lead to the conclusion that the enforcement penalty, decisions are within the rights of Polynesia does not have prescribed (admini- reached through negotiation with the offer On the above basis, the assessment tear	vstem is robust, represents regional best practice and spected, some breaches of regulations detected, pro- ssel owners (but not to individual captains at the mom- ed. As mentioned above 3.1.1(b) The Ministry in chain " or a "Disciplinary Commission". Review of minutes 94/MRM), indicated the following breaches of regulating usupected IUU activities in the EEZ of Kiribati, just no- hing vessels did not have properly functioning VMS VMS records and satellite imagery that 2 vessels were given such that sanctions for both vessels were eason. These vessels did not however appear on the than those administratively imposed had they appear he sanctions already imposed. In the second instance behind the malfunctioning VMS and only a verbal wark king order within 2 months of notification of warning. g applied for breaches of regulations and no evidence also evidence that a decision by the management autor in fisheries enforcement (<i>e.g.</i> if a verbal or written war ent system is inadequate. Similarly, with the concept of the management authority, unless prescribed per inistrative monetary) penalties in the instances descri- anding party as an alternative to court-based prosecution in determined that SG100 is fully met.	I is providing effective deterrence. The fact poides some confidence in support of this pent) to deal with non-compliance exist and rge of marine resources can call to order a of the last Joint Commissions meeting of ons: 2 professional licensed FP LL vessels orth of the FP EEZ around the Marqueses; on board while at sea. In the first instance were indeed found outside the FP EEZ. that their fishing licences were suspended IUU list proposed at TCC11. The vessels red before the Head Prosecuting Attorney e, sufficient evidence was provided by the ming was given, on condition that the VMS was provided to suggest these sanctions thority not to issue any penalty for breach ming is issued instead) does not <i>ipso facto</i> of consistency as it applies to the level of malties are available in legislation. French ribed above and settlements are generally on (a feature of many MCS systems).
	Complia	nce		
	Guide post	Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.



Met? Y			
		Y	Y
Justifi cation Fis cation Fis the tin an be an Th Ur se the to RF of an sy No Fr fol Ho for us SF bu 20 for pro sp ma wa lov TC ve	ishers systematically turn in their mandat be last 3 - 4 years. DRMM has a dedicate mely fashion (within two weeks of return and a dropbox for logbooks. Discards an eing returned to port <i>etc.</i> These are con- and other information important to the effe the national observer programme also infortunately port biological sampling by the observer coverage) but the plan is to be ere will be sanctions. These actions prove a support the effective management of the FMOs in terms of longevity and coverage to bserver coverage has unfortunately be not the lack of any significant breaches of ystem. onetheless, it must be pointed out that a rench Polynesia was again marked "com illow. It was noted that the 2016 3.4 % owever, this was understood to be "mand oreign EEZ and using observers from a re- sing observer programme. However, a rogramme in the Eastern Tuna and Billfis becies or species groups (turtles - identifi ahi (<i>Coryphaena hippurus</i>), and blue sha as found to provide annual estimates of w as 5.1 % can provide a good represen CC13 also agreed to form an intersession assion a timely manner so that they re-	ory logbooks usually within one week of return to pord port agent to assist in correctly filling out the logbook to port). DRMM (through CREOCEAN) also has a fid dETP interactions are recorded as is the inclusion sultable on demand. Cooperation in collection of fish ctive management of the resources and the fishery is has information in their logbooks and debriefing DRMM agents was briefly discontinued last year (more again have two agents in activity in 2017. In addition ide a suite of information that enables high-quality stoche fishery. Obviously such cooperation is acknowled as of data and the degree to which this information is used of data and the degree to which this information is used on consistently below 5 % (see CMM 2007-01) sind regulation provides a high level of confidence that fisher the most recent WCPFC TCC13 meeting (27 Septipliant" in all aspects for CMMs (as per Country Report observer coverage again falls below the minimum datory" only for those fleets operating on the high seategional programme. The fleet still prosecutes its operation and certified edge for the RFMO SPC logbooks. FP is therefore or lement this CMM nor has French Polynesia been san ufficient" under existing conditions to meet the needs CSIRO study in 2002 (Bravington et al., 2003) invest the fishery (ETBF - Australia) and estimated each desired to family, not to species, black martin (<i>Istiompax ir</i> ark (<i>Prionace glauca</i>). Even for low-level interaction is turtle bycatch precise to ±70 % (a 95 % confidence in tation of what is occurring in the fishery.	t, with 100 % of the fleet participating over oks if needed, and also to collect them in a eld office at the fishing port with an agent of some MARPOL items such as plastics peries data and analysis on catch, discard undertaken through membership of SPC. summaries. These too are consultable. onetary issues in favour of maintaining at- n, VMS must always be on while at sea or ock assessments to be undertaken by SPC dged to be" the best practice" for all tuna used for management purposes. The level be 2012. However, at sea/port inspections shers are complying with the management ember to 3 October 2017) Pohnpei FSM, t Part 1) the national fleet are obligated to 5 % as prescribed under CMM 2007-01. s or flag-state vessels authorized to fish in ations only in the EEZ of French Polynesia ed, as are the observer debriefers, through nly "invited" to aspire to the 5 % coverage ctioned for not being at the 5 % level since a of the WCPFC biological data mandates stigated possible designs for an observer gn's likely precision for five representative <i>natica</i>), blue marlin (<i>Makaira mazara</i>), mahi species such as turtles, a 5.1 % coverage as obtain copies of observer reports for their ons of possible violations. The group will



		improvements to the CMM for the Regional Observer Programme, the Agreed Minimum Standards and Guidelines of the Regional Observer Programme, and/or other Commission decisions.				
		From the above information the assessment team considers the level of scrutiny sufficient to demonstrate that SG100 is met.				
d	Systema	tic non-compliance				
	Guide post		There is no evidence of systematic non- compliance.			
	Met?		Y			
	Justifi cation	The team reviewed observer reports, logbook data, landings data and VMS tracks, and did not find any evidence that led to a suspicion of systematic non-compliance. The DRMM has verbally confirmed to the team that there is no evidence of systematic non-compliance in the fishery. No stakeholders provided any evidence of systematic non-compliance that could be substantiated by the team. This scoring issue is met.				
Refere	References WCPFC web site for all Summary Reports of the 11 th , 12 th and 13 th Meeting of the WCPFC and 10 th , 11 th and 12 th Meetings of the WCPFC Scientific and Technical and Compliance Committees					
OVER	OVERALL PERFORMANCE INDICATOR SCORE: 100					
COND	ITION NU	IMBER (if relevant):		N/a		



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.		
Scorir	ng Issue	SG 60	SG 80	SG 100
а	Evaluatio	on coverage		
	Guide post	There are mechanisms in place to evaluate some parts of the fishery-specific management system.	There are mechanisms in place to evaluate key parts of the fishery-specific management system	There are mechanisms in place to evaluate all parts of the fishery-specific management system.
	Met?	Y	Y	Ν
	Justifi cation	At the WCPFC level stock assessments a WCPFC13 Summary Report). The TCC als Part II reports – may make recommendati management system data for French Polyn	re peer reviewed as well as by members of the so provides reviews of compliance issues and ir ons) and thus there is a fairly comprehensive esia (bearing in mind that Part 1 report is quite e	e SC. Key CMMs are reviewed annually (see adividual country reports (review of Part I and review of submitted fishery performance and extensive).
		The French Polynesia Ministry responsible for marine resources does have irregular meetings to consider different issues concerning the fishery management system as prosecuted but the frequency of such meetings has usually depended on Minister. However, no matter the Minister, DRMM-industry meetings appear to be much more regular but still not fully structured. DRMM does not undertake research directly related to the tuna fishery nor does it have a formal annual/biannual research plan. It does ensure the timely provision of catch effort and related data to SPC (and IATTC Science), but it is SPC which is responsible for incorporating this information into the regional stock assessments used by WCPFC. The SPC stock assessment and other research outcomes are fed back to i) French Polynesia in a format to inform national fisheries management planning and ii) the WCPF Commission via the Scientific Committee. Research is driver primarily by the need to maintain target stock, and review the effects of fishing on non-target and dependent species (NTADs) and the marine ecosystem, consistent with P1 and P2		
		The WCPFC Strategic Research Plan 2012-2016 addressed four overall research and data collection priorities: monitoring of fisl activities through the collection, compilation and validation of data from the fishery; monitoring and assessment of target stocks; monitor and assessment of NTADS and of the pelagic ecosystems of the WCPO; and evaluation of existing Conservation and Managen Measures (CMMs) and of potential management options. This plan, combined with SPC, FFA and national plans (where they actue exist) associated with research and monitoring prove a strategic approach to ensuring reliable and timely information is available to informate management decisions. Additionally a WCPFC Shark Research Plan (SRP) is now in place. Research under the plan will be led by Oceanic Fisheries Programme of the Secretariat of the Pacific Community, and will contain assessment, research coordination and fisl statistics improvement components. The overall aim of the plan is to evaluate the status of blue, mako, oceanic whitetip, silky and three sharks in the western and central Pacific Ocean (WCPO) and to establish better datasets to support future assessments.		ata collection priorities: monitoring of fishing g and assessment of target stocks; monitoring n of existing Conservation and Management FFA and national plans (where they actually le and timely information is available to inform e. Research under the plan will be led by the issessment, research coordination and fishery lue, mako, oceanic whitetip, silky and thresher support future assessments.



		Although there appear to be no key parts of the management system where there is not some oversight, albeit mainly from WCPFC but also via a process that is not formalized, from industry and other stakeholders, SG 80 is met. However, given there is no comprehensive research plan across P3, SG100 is not met.			
b	Internal	and/or external review			
	Guide post	The fishery-specific management system is subject to occasional internal review.	The fishery-specific management system is subject to regular internal and occasional external review.	The fishery-specific management system is subject to regular internal and external review.	
	Met?	Y	Y	Ν	
	Justifi cation Because French Polynesia is a participating territory to the WCPFC it is subject to regular review of the fishery-specific manager system via TCC, at SC and during annual Regular Sessions. This comprises regular review of Part I (public domain information) and II Reports (individual country MCS activities considered confidential). Before these reports are submitted they are subject to internal re- mostly at the Ministry responsible for marine resources and of course DRMM. Development of a national codified management plan is reported to be "in process" and underway for validation. It is hoped that incorporate more formalized review processes. There is also the much-awaited "White Paper" (<i>Elaboration du Schéma Directe Développement de la Pêche Hauturière de la Polynésie française</i>) for a 10-year horizon of actions for « sustainable » development LL fishery in French Polynsia. Whether there will be some text to include review (external and/or internal) of some elements of management system, particularly subsidies, the size and nature of fleet and fishery-specific objectives has yet to be forwarded to Ministry and eventually DRMM.			ar review of the fishery-specific management of Part I (public domain information) and Part e submitted they are subject to internal review,	
				Inderway for validation. It is hoped that it will Paper" (<i>Elaboration du Schéma Directeur de</i> actions for « sustainable » development of the hal and/or internal) of some elements of the fic objectives has yet to be forwarded to the	
	Subsidies do continue to assist the fishery sector in French Polynesia. There are actually 4 programmes established by the governm			programmes established by the government:	
		FIM (Funds for Investment in maritime activities – Assembly Deliberation 2000-65/APF of 8 June 2000);			
		 DASP (Support and Assistance for the fisheries – Ministerial Decree N° 928/CM of 2 July 2007); 			
		 Country Law (LP 2013-02 of 14 January 2013 and Ministerial Decree N° 171/CM of 14 February 2013) which covers assistance in offsetting certain social/health insurance taxes imposed on fishers through their employers (vessel owners); and 			
		• FRPH (Fonds de regulation des prix des hydrocarbures) - Marine fuel (diesel and for smaller vessel using gasoline) cos subsidized.			
	FIM, through the Consultative Commission process, attributes justifiable expenses for replacement of used equipment, such engines, generators, hydraulic spools, security at sea apparatus, <i>etc.</i> DASP subsidises air freight costs for fresh fish exports and the USA and provides reduced prices for ice to professional fishers Thus, there is informal but regular contact between incomposition other stakeholders and DRMM and any issues relating to management are brought up and considered. The continuance of programmes is certainly reviewed "regularly" in this sense.				
		There is also a government Directorate fo <i>réformes de l'administration</i>) which was call is a sort of "external/internal" review con department <i>etc.</i> , therefore including DRMM	r Modernisation and Administrative Reform (Dl led the General Administrative Inspection Servic nmission which annually analyses the function <i>I</i> . The final report is reviewed by the President	MRA – Direction de la modernisation et des e (IGA) until 17 December 2014. This service n of each governmental service/directorate, t of French Polynesia who then presents the	



COND	ITION NU	MBER (if relevant):	N/a	
OVER/	ALL PERF	ORMANCE INDICATOR SCORE:	80	
		CMM 2007-01 (Regional Observer Programme)		
		CMM 2006-08 (Boarding and Inspection Procedures)		
		Various CMMs including:		
		TCC10, 11 and 12, Technical and Compliance Committee Regular Session - Summary Reports.		
		WCPFC11,12 and 13 Summary Reports		
Refere	ences	http://lexpol.cloud.pf (public service internet portal for access to all government legal documents in French Polynesia – French text only),		
		French Polynesia observer reports 2013-2016		
		The specific WCPFC13 decision was "Subject to the recommendations from TCC12 (CMM 2015-07, para 40) a review of the CMS will be conducted by an independent panel selected by the Executive Director in consultation with Members at the end of 2017."		
		Paragraphs 40 and 41 of CMM 2015-07 provide: "40. This measure shall be reviewed in 2017, and the terms of that review will be determined by TCC12 in 2016. 41. This measure will be effective for 2016 and 2017 only."		
		Since at this stage, there is no "regular" external review SG100 is not met but SG80 is met.		
		and actions were developed in response to recommendations of the review and these were considered by W recent Independent Review of the Commission's Transitional Science Structure and Functions suggested period stock assessments. This has also been adopted by the WCPFC. The Commission at its annual meeting in Ba 2016 also sanctioned a process for the development of a draft Strategic Plan of a ten years' duration focusi directions and priorities to be supported by a shorter term three years' Corporate Plan. In addition, the of Management Measure for the Compliance Monitoring Scheme (CMM 2015-07) says that "this measure shall be terms of that review will be determined by TCC12 in 2016."	/CPFC9 in 2012. Another odic external review of the li, Indonesia in December ng on high level strategic current Conservation and reviewed in 2017, and the	
		At the regional/international level WCPFC does not have a regular programme of external review. However,	as far back as 2008 the	
		performance, including spending accountability, report before the Assembly. Regular external review of Frence conducted by the CTC (<i>Chambre Territoriale des Comptes</i>) which audits the whole of French Polynesia's function and structures associated with the fishery. These include S3P (Fishing Port Management), TNR (Tahiti Nui Rava Métiers de la Mer de la Polynésie fraçaise – vessel operator training school) <i>etc</i> ,	ch Polynesian policies are ioning, including elements a'ai), CMMPF (Centre des	



Appendix 1.2 Conditions

The fishery is certified with nine conditions, as follows:

Table 19. Condition 1

Performance Indicator	SOUTH PACIFIC ALBACORE 1.2.1a. The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.
Score	70
Rationale	 WCPFC sets out its intention to define a formal harvest strategy for each of its key stocks, including South Pacific albacore, in CMM 2014-06, which has an associated workplan. Meanwhile, the elements of the WCPFC harvest strategy which are actually in place are the following: Data collection on the stock and fishery Stock assessment process Limit reference point (explicit) and target reference point Current harvest control rule (CMM 2015-02) and 'available' HCR Monitoring of implementation of CMM 2015-02 via data gathering and Part 1 and 2 reports to the Commission This management strategy is reviewed annually during the Commission meeting. It is relevant to consider first of all what the objectives of the WCPFC harvest strategy are, particularly given that there is still no explicit target reference points (despite the fact that this was scheduled to be decided in 2016 under the workplan for CMM 2014-06). There are two sources of objectives: Objectives associated with the (currently still implicit) TRP options. These would be those associated with FMSY (from the stock assessment), MEY (see Pilling et al., 2015) and/or 45%SBF=0 (as proposed by FFA to WCPFC13 and intended to be used as the basis for the management provisions under the Takelau Arranement);
	 Objectives associated with CMM 2010-05: this is not clearly expressed in the CMM, but the explicit objective can be assumed to be (as per paragraph 1) no increase in the number of fishing vessels actively fishing for South Pacific albacore south of 20°S over current or recent historic levels.
	The most recent biomass estimate is ~40%SB _{F=0} , which is above SB _{MSY} (see 1.1.1b), with F at 39%F _{MSY} . Hence if the target is taken to be purely biological (i.e. MSY reference points), then it is being exceeded, by a wide margin. However, biomass is below the bio-economic reference point put forward by the FFA and the Tokelau Arrangement countries (see WCPFC13 report), and well below MEY (which at current albacore prices, implies a target >>50%SB _{F=0} ; Pilling et al., 2015). Hence bio-economic targets are not being met. Furthermore, the projections in SC12-SA-WP-06 (Pilling et al., 2016a) show that if the fishery continues with current (2014) effort, the biomass is predicted to decline, with a 19% probability of falling below the agreed LRP by 2033. Hence, from a purely biological point of view, the harvest strategy has not been tested as yet, but will be tested in the relatively near future. From an economic point of view, the harvest strategy is clearly failing, but this is not within the remit of MSC (although it is considered in relation to WCPFC's decision-making processes – see PI 3.2.2).



	Fishing effort on albacore has increased considerably over the last few years, however, particularly above 20°S, where there is no CMM in place. It does, however, appear to have stabilised since 2010 (when the first CMM for SPA was put in place), albeit at a relatively high level compared to historical catches. On this basis, it is reasonable to argue that the WCPFC harvest strategy has not been 100 % successful in stabilising the fishing impact on the stock, but it has most likely had some effect in slowing the increase in fishing mortality. It is also worth noting that the longline fishery targets albacore above the size at maturity, so is impacting potential recruitment, even at high exploitation rates, less than, say, the purse seine bigeye fishery (this is the reason why estimates of SB _{MSY} are low relative to SB _{F=0}). In addition, the Tokelau Arrangement, once implemented, will provide a more clearly-defined harvest strategy, at least within participant EEZs.
Condition	of the stock, with and the elements of the harvest strategy that is responsive to the state assessment, harvest control rules and management actions) working together to achieve stock management objectives.
Milestones	The milestones have been aligned with the latest iteration of the WCPFC harvest strategy workplan (WCPFC Circular 2016-73, supplement, attachment L):
	Year 1: Target reference point agreed; SC provides advice on candidate HCR options (Score: 70).
	Year 2: Performance of candidate HCRs evaluated based on agreed TRP (Score: 70)
	Year 3: Further advice on candidate HCRs; Commission considers candidate HCRs (Score: 70)
	Year 4: HCR agreed. Harvest strategy in place. (Score: 80)
Client action plan	See Appendix 7
Consultation on condition	No consultation is required since WCPFC have already expressed their intention of undertaking this process (see CMM 2014-06).



Table 20. Condition 2

Performance Indicator	 SOUTH PACIFIC ALBACORE 1.2.2a. 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. 1.2.2b. The HCRs are likely to be robust to the main uncertainties. 1.2.2c. Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.
Score	60
Rationale	Following SA2.5, a HCR may be considered to be 'available' and 'expected to reduce the exploitation rate as the PRI is approached' at SG60 if i) 'stock biomass has not previously been reduced below BMSY or has been maintained at that level for a recent period of time' (SA2.5.2a) and ii) 'there is an agreement or framework in place that requires the management body to adopt HCRs before the stock declines below BMSY' (SA2.5.3b).
	The first requirement is met as described in PI 1.1.1. The second requirement is met by CMM 2014-06 and associated workplan. Although the key workplan milestones for SPA for 2016 (WCPFC13) (agree acceptable levels of risk of falling below the LRP and agree a TRP) were not met, the reports of both SC12 and WCPFC13 show that there was a strong attempt to meet them. The workplan has been revised and it has been agreed in this new workplan that a TRP will be agreed for SPA for by 2017 'at the latest'. For the moment, the assessment team (and other CABs for relevant fisheries) agreed to continue taking WCPFC's plan to put in place a well-defined HCR for SPA at face value – although this obviously cannot continue indefinitely unless concrete progress is made. SG60 is met but SG80 is not met.
	Because the HCR is scored in scoring issue a as 'available' rather than 'well- defined', scoring issues b and c cannot be met at the SG80 level.
Condition	South Pacific albacore needs a harvest control rule that ensures that the exploitation rate is reduced as the PRI is approached and is expected to keep the stock fluctuating around the target level and robust to the main uncertainties. The tools used to implement the HCR should be effective in achieving the required exploitation levels.
	The milestones have been aligned with the latest iteration of the WCPFC harvest strategy workplan (WCPFC Circular 2016-73, supplement, attachment L).
Milestones	Year 1: Target reference point agreed; SC provides advice on candidate HCR options. (Score: 60)
Milestones	Year 2: Performance of candidate HCRs evaluated based on agreed TRP. (Score: 60)
	Year 3: Further advice on candidate HCRs; Commission considers candidate HCRs. (Score: 60)
	Year 4: HCR agreed. Harvest strategy in place. (Score: 80)
Client action plan	See Appendix 7



Consultation on	No consultation is required since WCPFC have already expressed their
condition	intention of undertaking this process (see CMM 2014-06).



Table 21. Condition 3

Performance Indicator	WCPO YELLOWFIN 1.2.1a. The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.
Score	70
Rationale	The stated objective of the WCPFC harvest strategy (as defined in the target reference point given in CMMs 2015-01 and 2016-01) is to maintain the stock at the MSY level. CMM 2014-06 commits WCPFC to developing a formal harvest strategy for yellowfin and the other key stocks; none of the milestones for yellowfin have yet been met, however (see 2014-06 workplan and summary report from WCPFC13). For the moment, the elements of the WCPFC harvest strategy are the following: Data collection on the stock and fishery
	 Stock assessment process Limit reference point (explicit) and target reference point (provisional – from CMM 2015-01 and 2016-01) (F_{MSY}) Current harvest control rule (CMM 2016-01) and 'available' HCR (s Monitoring of implementation of CMM 2015/2016-01 via data gathering and Part 1 and 2 reports to the Commission This management strategy is reviewed annually during the Commission meeting.
	Given that the stock status of WCPO yellowfin is healthy, as it has been since stock assessments started, the efficacy of the harvest strategy for yellowfin has not been tested. The most recent stock assessment suggests that catches are approximately at MSY level, such that in the long run, this level of fishing mortality would result in biomass declining to ~MSY levels, which is the current (implicit) target biomass (via F_{MSY} as set out in CMMs 2015-01 and 2016-01). Fishing effort on yellowfin has increased more or less continuously over the last few decades. Since 2000, catches have stabilised at just over 500,000 t. Overall, the fishery is achieving stock management objectives (reference points), since F is estimated to be $ with \sim 95% confidence, although it is not clear how much the harvest strategy implemented by WCPFC has to do with this. On this basis, the team felt that SG60 is met.$
	It is impossible to evaluate in detail what WCPFC might do in the future, should yellowfin stock status decline to target levels or below. CMM 2014-06 provides for the development of a harvest strategy, but is somewhat vague on the management measures to be put in place in order to be confident of maintaining stock biomass at the target level; progress by WCPFC to date on the implementation of the 2014-06 workplan has been disappointing (see WCPFC13 summary report).
	PNA harvest strategy:
	PNA operate a vessel day scheme (VDS) which limits effort by setting an overall 'TAE' (total allowable effort) which is divided up for each of the parties to the agreement. The TAE is set annually based on objectives of 'optimal exploitation' as well as WCPFC provisions (which presumably means MSY) – the focus of the scheme is, however, skipjack rather than yellowfin. For skipjack, fishing effort in 2010 is suggested as a proxy reference point for 50%SB _{F=0} (VDSTSC3 Working Paper 1a), but this reference point is not apparently applied to yellowfin. Nevertheless, the document shows that the stock status of yellowfin is taken into account in setting the TAE. The PNA harvest strategy applies to ~half the total catch of the stock.



	 Overall scoring: Overall, given the following points, the team considered that SG60 is met: The stock status is good, and status quo projections suggest that it will remain above the MSY level (Pilling et al. 2016d) A combination of WCPFC and PNA harvest strategies are able to limit effort to an appropriate level WCPFC and PNA are able to be at least somewhat responsive to the status of the stocks (cf bigeye) A HCR can be argued to be 'available' – see 1.2.2. The team concluded, however, that SG80 is not met, because the harvest strategy is insufficiently responsive to the status of the stock. The team were not confident based on past or current form that, should yellowfin stock status be revealed at the next stock assessment to be approaching or below target levels, WCPFC and/or PNA would be able to stabilise or decrease fishing mortality in a fully effective and timely way under the existing harvest strategy.
Condition	WCPO yellowfin needs a harvest strategy that is responsive to the state of the stock, with and the elements of the harvest strategy (monitoring, stock assessment, harvest control rules and management actions) working together to achieve stock management objectives.
	The milestones have been aligned with the latest iteration of the WCPFC harvest strategy workplan (WCPFC Circular 2016-73, supplement, attachment L).
Milestones	Year 1: Interim performance indicators for the harvest strategy agreed. (Score: 70)
	Year 2: Target reference point agreed. (Score: 70)
	Year 3: Final performance indicators for evaluating HCRs agreed. (Score: 70)
	Year 4: HCRs agreed. Harvest strategy in place. (Score: 80)
Client action plan	See Appendix 7
Consultation on condition	No consultation is required since WCPFC have already expressed their intention of undertaking this process (see CMM 2014-06).



Table 22. Condition 4

Performance Indicator	 WCPO YELLOWFIN 1.2.2a. 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. 1.2.2b. The HCRs are likely to be robust to the main uncertainties. 1.2.2c. Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.
Score	60
	For the WCPFC harvest strategy, the harvest control rule is set out in CMM 15-01 (WPCO bigeye, yellowfin and skipjack). For PNA, the harvest control rule is to adjust the TAE to maintain 'optimal exploitation' (assumed to be likewise a proxy for F_{MSY}).
	In practice, because yellowfin stock status is good (target F being achieved with ~~90% probability, as noted above), and has always been good (meeting the requirements of SA2.5.2a), limits on the fishery have not really been required up till now.
Rationale	CMM 14-06 (described in 1.2.1a above) requires WCPFC to adopt a HCR for this stock, with an associated workplan. Status quo projections suggest that the stock will remain above B_{MSY} over this time period (Pilling et al., 2016d). Therefore the requirements of SA2.5.3b are met.
	The team concluded on this basis that responsive HCRs are 'available' at WCPFC. In addition, the combined impact of CMM 15-01 and the PNA vessel day scheme imply that the existing HCRs, although somewhat weak, are somewhat responsive to the status of the stock. On this basis, SG60 is met for WCPO yellowfin.
	The team did not consider, however, that this approach could be described as 'well-defined' pre-agreed rules, nor can it be said to 'ensure' that the exploitation rate is reduced. SG60 is met, but SG80 is not.
	Because the HCR is scored in scoring issue a as 'available' rather than 'well- defined', scoring issues b and c cannot be met at the SG80 level.
Condition	WCPO yellowfin needs a harvest control rule that ensures that the exploitation rate is reduced as the PRI is approached and is expected to keep the stock fluctuating around the target level and robust to the main uncertainties. The tools used to implement the HCR should be effective in achieving the required exploitation levels.
Milestones	The milestones have been aligned with the latest iteration of the WCPFC harvest strategy workplan (WCPFC Circular 2016-73, supplement, attachment L). Dates are aligned with the WCPFC calendar (i.e. decisions taken at plenary held annually in December).
	Year 1: Interim performance indicators for the harvest strategy agreed. (Score: 60)
	Year 2: Target reference point agreed. (Score: 60)
	Year 3: Final performance indicators for evaluating HCRs agreed. (Score: 60)
	Year 4: HCRs agreed. Harvest strategy in place. (Score: 80)



Client action plan	See Appendix 7
Consultation on condition	No consultation is required since WCPFC have already expressed their intention of undertaking this process (see CMM 2014-06).



Table 23. Condition 5

Performance Indicator	2.3.1b The UoA meets national and international requirements for the protection of ETP species. The UoA does not hinder recovery of ETP species. Direct effects
Score	75
Rationale	Scoring issue b (SG80): Known direct effects of the UoA are highly likely to not hinder recovery of ETP species
	Turtles: Recorded impact on turtles (from observer reports) are one each for four species: green, hawksbill, leatherback and loggerhead, over the three years of observer data, scaling up to approximately to 10 interactions per year (all species combined) but with low percentages of observer information there is uncertainty in the precision of this scaled value. No analysis has been done for this fishery on the potential impact of turtle bycatch. However, at least two Regional Management Units (RMUs – loggerhead (recorded in bycatch) and olive ridley (no records) overlap with the French Polynesia EEZ and are considered to be at high risk from bycatch in longlines (Table 11).
	The US government (NOAA-Fisheries) have done an analysis for the American Samoa longline fishery, which has a similar bycatch profile (although with fewer species of shark). They estimate that 10 interactions with green turtles corresponds to 0.05 mortalities on adult nesting females (because interactions occur almost exclusively with juveniles). Green turtles in French Polynesia most likely come from the central South Pacific population segment (the smallest), and on that basis, this would correspond to an impact of 0.0017 % of adult nesting females per year. Similarly, the analysis concludes that the impact on the leatherback population (SW Pacific) is ~0.0001 % per year and the hawksbill population (Oceania) and the loggerhead population (South Pacific) is ~0.001 %. On this basis, NOAA concluded that American Samoa is meeting its obligations under the US Endangered Species Act. (These analyses are worked out based on a figure of 10 interactions / year for each species.)
	A key part of this analysis hinges on the fact that all the turtles caught are juveniles (hence natural mortality is applied to work out the mortality per nesting female associated with one juvenile mortality). This is known in American Samoa from observer data, but is an assumption here. It is reasonable for leatherback, loggerheads and hawksbills, which do not nest in French Polynesia, but may not always apply for green turtles, because there is regular or punctual nesting recorded for Bora Bora, Maiao, Maupiti, Scilly (classed as a turtle reserve since 1992) and Bellinghausen in the Society Island as well as on Tikehau and Mataiva in the Tuamotu Islands (www.temanaotemoana.org) (Figure 16). Of all of the islands and atolls surveyed in French Polynesia 41 % (57 in total) have been identified as potential green turtle nesting sites. If the fishery takes nesting-age females, the impact will be more serious. If all interactions are with adult females, the impact on local nesting populations could be higher. A survey of nesting at Tetiaroa, however, suggests that the population is stable or increasing (see Section 2.4.4.4).
	On this basis, it is not known whether the direct effects of the UoA are highly likely to not hinder recovery of ETP species therefore SG80 is not met. Birds: It is difficult to evaluate bird interactions in detail, because they are not always identified to species in the observer reports. However, given the low level of interactions and generally the low level of fishing pressure over a very large area (5,000,000 km ² ; 118 islands of which 51 are uninhabited), the team has some confidence that impacts are likely to be small – SG60 is therefore met for seabirds. There are, however, some petrel species on the French Polynesia red



	list (IUCN, 2015). Given that most of the interactions are with unidentified petrels, there is no high level of confidence, that populations are not hindered. The lack of identification to species level and observer coverage lower than CMM requirements (5 %) (CMM 2007-01, point 6 – see Section 2.4.1) means there is low certainty of the scale of the fishery's impact. Improved data collection and higher observer coverage would be required for SG80 to be met.
Condition	The evidence base for determining interaction rates with ETP species, in particular seabirds and turtles, should be improved so that trends in interactions can be measured over time and so that it can be determined whether the UoA may be a threat to protection and recovery of the ETP species. Should a potential threat be identified, the fishery should demonstrate that the current ETP management strategy in place is adequate to ensure direct effects of the UoA are highly likely to not hinder recovery of ETP species.
Milestones	Year 1: Evaluate current data collection strategy and identify areas of improvement. Develop improved data collection plan; this can be through increased observer coverage, improved self-reporting or through some other measure as appropriate (Score: 75).
	Year 2: Demonstrate new data collection plan has been implemented. (Score: 75).
	Year 3: Continued data collection. Data analysis and 'put additional management measures in place if analysis suggest this is necessary (Score: 75).
	Year 4: Data analysis results show that the current ETP management strategy in place is adequate to ensure direct effects of the UoA are highly likely to not hinder recovery of ETP species. (Score: 80)
Client action plan	See Appendix 7
Consultation on condition	As mentioned in the Client Action Plan (Appendix 7), DRMM will work with Manu and also rely on DRMM's observer programme. A letter of support from Manu for the relevant activities in the action plan is provided in Appendix 8.



Table 24 Condition 6

Performance Indicator	2.3.2d Management strategy implementation
Score	75
Rationale	Scoring issue d (SG80): There is some evidence that the measures/strategy is being implemented successfully.
	All ETP species: during site visit interviews with a wide range of stakeholders (see Section 3.4.1), non-compliance with the Code de l'Environnement (which declares the French Polynesia EEZ as a shark, whale and seaturtle sanctuary) was not a cause for concern in this fishery. The DRMM equally reported no issues with non-compliance in relation to the Code de l'Environnement. Overall, whilst there is no evidence that the measures described in SIa are not being implemented successfully, the observer coverage in this fishery is currently too low to provide evidence that this is indeed the case.
	During the site visit, some specific issues on implementation of ETP management came to light:
	- Implementation of CMM 2008-03 point 6 'shall ensure that the operators of all such longline vessels carry and use line cutters and de-hookers to handle and promptly release sea turtles caught or entangled promptly release sea turtles caught or entangled promptly adhered to.
	- The evidence of interaction rate comes from observer data, and current observer rates are below those required by CMM requirements (5 %) (CMM 2007-01, point 6).
	- For some species (birds) identification is a problem; it is not possible to say, for example, whether the fishery interacts with the petrel species which are protected.
	On the basis of the above points the measures/strategies are not being implemented successfully, SG80 is not met.
Condition	The client should provide evidence that all relevant national and regional regulations on fishery interactions with ETP species are adhered to by the UoA so that it can be demonstrated that the fishery does not hinder recovery of ETP species.
Milestones	Year 1: Identify short-comings at fleet level in the implementation of relevant national and regional regulations in relation to ETP species. Identify short-comings at DRMM to ensure compliance with CMMs, particularly in relation to observer coverage (CMM 2007-01). (Score: 75)
	Year 2: Put in place measures to ensure implementation of relevant national and regional regulations in relation to ETP species at fleet and DRMM level. (Score: 75)
	Year 3: Demonstrate that all relevant national and regional regulations on fishery interactions with ETP species are adhered to by the UoA. (Score: 80).
Client action plan	See Appendix 7.
Consultation on condition	As mentioned in the Client Action Plan (Appendix 7), DRMM will work with Manu and also rely on DRMM's observer programme. A letter of support from Manu for the relevant activities in the action plan is provided in Appendix 8.



Table 25. Condition 7

Performance Indicator	 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.
Score	60
Rationale	Scoring issue a (SG80): 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.
	Some quantitative information is available from observers but the level of implementation is below the 5% target required by CMM 2007-01 (Section 2.4.1). While some quantitative data are clearly available, the team considered that by not meeting the 5% target, these data were insufficient 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. SG80 is therefore not met. This is further supported by the problems with species identification of birds in the observer data.
	Scoring issue b (SG80): Information is adequate to measure trends and support a strategy to manage impacts on ETP species.
	As set out in 2.3.2, there is a strategy through the CMMs which should work well if implemented. Although some information is available on UoA impacts on ETP species (SG60 is met), the current low levels of observer coverage, combined with bird identification issues mean that it may not be possible to measure trends in interactions for some species. SG80 is not met.
Condition	The evidence base for determining interaction rates with ETP species, in particular seabirds and turtles, should be improved so that trends in interactions can be measured over time and so that it can be determined whether the UoA may be a threat to protection and recovery of the ETP species. Should a potential threat be identified, the fishery should demonstrate that the current ETP management strategy in place is adequate to ensure direct effects of the UoA are highly likely to not hinder recovery of ETP species.
Milestones	Year 1: Evaluate current data collection strategy and identify areas of improvement. Develop improved data collection plan; this can be through increased observer coverage, improved self-reporting or through some other measure as appropriate (Score: 60).
	Year 2: Demonstrate new data collection plan has been implemented. (Score: 60).
	Year 3: Continued data collection. Data analysis and 'put additional management measures in place if analysis suggest this is necessary (Score: 75).
	Year 4: Data analysis results show that the current ETP management strategy in place is adequate to ensure direct effects of the UoA are highly likely to not hinder recovery of ETP species. (Score: 80)
Client action plan	See Appendix 7.



Consultation on condition	As mentioned in the Client Action Plan (Appendix 7), DRMM will work with Manu and also rely on DRMM's observer programme. A letter of support from Manu
	for the relevant activities in the action plan is provided in Appendix 8.

Table 26. Condition 8

Performance Indicator	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.					
Score	60					
Rationale	For full rationale see Evaluation table for PI 3.2.1. No part of SG80 is met since objectives are not explicit either in relation to translation of WCPFC objectives into national policy / regulation, or in relation to national-level objectives for the development and management of the fleet and fishery.					
Condition	The client should ensure that short and long-term objectives, consistent with the outcomes expressed by MSC's Principles 1 and 2, are explicit within the French Polynesia management system. This may be done via the promulgation of a codified national fishery management plan, as proposed during the site visit, or by any other suitable means. The objectives should be responsive to amendments as needed to accommodate WCPFC CMMs, and take account of the general provisions of the Honolulu Convention (2000).					
Year 1: Demonstrate that there have been positive advances by DRM consultation with all affected stakeholders and other partners, regarding development of explicit fishery-specific long- and short-term objectives Year 2: Demonstrate that the objectives have been agreed via an app national legal instrument or by some other means, and are being used fisheries decision-making.						
Client action plan	See Appendix 7.					
Consultation on condition	DRMM has the power to develop and promulgate fisheries objectives and/or management plans (under the Code de l'Environnement). No consultation is therefore required with other organisations necessary to implement this condition.					



Table 27. Condition 9

Performance Indicator	3.2.2b. 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.
Score	75
	For full rationale see Evaluation table for PI 3.2.2. SG60 is met for both management systems. SG 80 is met for French Polynesia, where the management system is very precautionary, but is not met for WCPFC.
Rationale	Commission decision-making processes are based heavily on Scientific Committee reports on the status of target and non-target species and respond to serious issues, such as overfishing, and suspected overfished (e.g. status of bigeye). However, at the Thirteenth Regular Session of the WCPFC, December 2016, the Ocean Fisheries Programme of SPC reported that although the South Pacific Albacore stocks were not overfished, the decline in CPUE since 1992 has raised concerns over the economic viability of the fishery. The SPC projections suggest that current catch and effort is not sustainable and the SPC bio-economic analysis suggests that consideration should be given for the implementation of alternative management measures as the CMM for South Pacific Albacore (CMM 2010-5) appears to not be effective in constraining effort. Far so, the decision-making process has not responded effectively. The team decided to treat this issue as 'important' (based on its impact on many WCPFC CCMs), although not (as yet) 'serious' (based on the stock status). Therefore, for regional-level decision-making processes, the team concluded that SG60 is met, but SG80 is not yet met.
Condition	At the Commission level, decision-making processes should respond to important issues, and specifically to the declining catch rates of South Pacific albacore, in a transparent, timely and adaptive manner. This could be done by implementing a formal harvest strategy, as set out in CMM 2014-06 and in Condition 1, or by some other means if appropriate.
	Year 1: Some evidence that the Commission is responding to the issue of SP albacore catch rates, e.g. by progressing with the harvest strategy as per the agreed workplan, or some other evidence. (Score: 75)
Milestones	Year 2: As per Year 1. (Score: 75)
	Year 3: As per Year 1 (Score: 75)
	Year 4: Decision-making processes have responded to the albacore catch rate issue by putting in place a harvest strategy, or by some other suitable means. (Score: 80)
Client action plan	See Appendix 7.
Consultation on condition	WCPFC have already expressed their intention of addressing this issue (see CMM 2014-06), so consultation with WCPFC is not required.



Appendix 2 Pilot WCPFC Principle 1 harmonisation meeting: report

Appendix 2.1 Harmonisation Meeting for Western Pacific Tuna Fisheries

1. Background

In July 2015 the MSC Board signed off an internal MSC Tuna Strategy that was developed to address concerns in regard to the certifications of highly migratory species that are managed by Regional Fisheries Management Organisations (RFMO). Specifically, strategy aimed to develop recommendations and actions in relation to tuna and swordfish fisheries. Among a number of key risks and recommendations identified, was the need to reduce CAB inconsistencies in the application of the MSC standard. In early 2016 the MSC developed and consulted on a pilot harmonisation workshop proposal that would apply to RFMO managed stocks, including tuna and swordfish. A key aim of the pilot harmonisation meeting was to create a single point for harmonisation among 'certified' and 'in assessment' fishery assessments, with a focus of harmonising the scores and justifications for Principle 1.

The first pilot workshop for the proposed harmonisation process for fisheries with multiple assessments on one stock/region was held in Hong Kong on 21-22 April 2016. The first pilot considered four stocks in the western Pacific managed by the Western and Central Pacific Fisheries Commission (WCPFC). These stocks were: yellowfin tuna, skipjack tuna, North Pacific albacore, South Pacific albacore.

Funding for the pilot was by the MSC and CABs. MSC funded the participation of P1 and P3 assessors, an independent peer reviewer, meeting facilitator, and MSC advisory staff. A participants list is attached as Appendix A.

2. Meeting Outcome

The proposed outcomes of this process leading into the meeting were a complete set of updated P1 scores, rationales and updated condition statuses. In order to get to these outputs, a harmonisation team leader was assigned to each stock and tasked gather new information (namely the latest scientific and management advice from WCPFC) and reports containing the rationales for Principle 1 Performance Indicators from the most recent assessment (PCDR or PCR). In addition, the latest condition statuses were prepared, with all the aforementioned information provided to stakeholders in a public Dropbox. Following a 30-day stakeholders review period, assessment team members then collated information in preparation for the meeting.

As mentioned above, the proposed outcome of the pilot was a complete set of updated P1 scores, rationales and updated condition statuses for each of the four stocks. However, while the process successfully dealt with harmonisation and aided CAB and team discussions, the meeting did not result in definitive text. Therefore, the CAB experts agreed that the information from this meeting would be considered at the next surveillance or full assessment audit for individual fisheries. Additionally, if new information presented at those audits resulted in a change of score/condition, they would initiate further harmonisation discussions to update scores as needed. This was agreed by the MSC and deemed appropriate in this case.



3. Document overview

The document presents the outcome from the Hong Kong harmonisation meeting. This is a working document prepared by all involved assessors to inform and guide CAB teams as they assess tuna fisheries in the WCPFC area. It is intended as a point of reference for multiple ongoing assessments as of April 2016. As mentioned above, if new information becomes available, harmonisation between assessment teams will still be required. New information of relevance may come from fisheries under assessment, the WCPFC, other tuna fisheries under assessment in different regions, MSC interpretations, etc.

The initial expectation of definitive P1 texts included that those texts would then be publically available. Though the meeting has only resulted in a working document, there was general agreement that this document should still be made publically available. It should be noted, though, that it is a record of discussions and a point of reference rather than binding in any formal sense.

4. Meeting Record

On Day 1, three of the four species were examined in detail for Principle 1 (Skipjack, Yellowfin and Southern Albacore). Northern Albacore was examined on Day 2, during which there was also a discussion about the process of scoring different management elements in P3.

The main intent of discussions on P1 was to harmonise scores, rationales, core reasoning, etc., but not to produce generic rationales to be used as boilerplate for WCPFC assessments. It was agreed that rationales should be consistent in reasoning and performance scores, but will usually differ in wording by CAB and assessment. It is important to note that in some cases, scores were numerically aligned, but individual wording in the rationales for those scores may have differed. In those cases, rationales were discussed to ensure alignment.

In examining the detail for each element for the examined species, it was found that, for most elements, there was very close alignment which required no further harmonisation.

- Skipjack (SKJ): a total of 3/6 Performance Indicators (PI) and 17/20 Scoring Issues (SI) were already harmonised among 4 existing assessments in the WCPFC. PIs that were preharmonised were 1.1.1, 1.2.2 and 1.2.4. A total of 3 SIs differed. A consensus was reached on these scores and rationales, which will be harmonised at the next surveillance audits or reassessments as appropriate.
- Yellowfin (YFT): a total of 3/6 PIs and 15/20 SIs were already harmonised among 4 existing assessments in the WCPFC. PIs that were pre-harmonised were 1.1.1, 1.1.2 and 1.2.1. A total of 5 SIs differed, were discussed, and consensus reached.
- Southern Albacore (SPA): a total of 2/6 PIs and 14/20 SIs were already harmonised among 5 existing assessments in the WCPFC. PIs that were pre-harmonised were 1.1.1 and 1.2.2. A total of 5 SIs differed, were discussed, and consensus reached.
- Northern Albacore (NPA): A total of 3/6 PIs and 17/20 Sis were already harmonised among three existing assessments. PIs that were pre-harmonised include 1.1.1, 1.1.2 and 1.2.2. A total of 5 SIs differed, were discussed, and consensus reached.

For all stocks, for most SIs, discussions identified similarities in intent and logic such that changes or further harmonisation was not required. There were, however, some SIs that required changes to be adopted by individual assessments. Most of these were relatively minor but a few required changes in scores and wording. The tables below detail these as agreed at the meeting.



Two generic issues identified during the meeting included: i) the problems that arise from dealing with assessments done under up to 4 different versions of the MSC requirements, and ii) differing timelines under which various assessments are operating.

A major outcome of the meeting was the fact that each assessment team, and all Independent Experts (IE) present, now have a consistent (and harmonised) understanding of how to score, write-up and interpret each element for P1 for the WCDPFC tuna fisheries under MSC assessment. This should provide much more consistent scores, rationales and milestones in future iterations, assessments and surveillance audits.

For all the stocks, Conditions need to be raised at PI1.2.1, SI(A) and Pi1.2.2 SI(A,B,C). For both, to meet various requirements at CR SA7.11, it was agreed that i) the Conditions raised need to have a consistent duration (end point), and ii) that milestones should reflect the work plans on harvest strategies/harvest control rules agreed at the WCPFC Annual Meeting in December 2015.

With regard to scoring at PI 1.2.2 (Harvest Control Rules, HCR), consideration was given to December 2015 MSC Interpretation, IA Rulings, and recently published Maldives Pole and Line 3rd surveillance report. It was agreed that for all stocks, at this time, SG60 scoring at SI(A) and SI(C) should use the "availability" criteria as previously agreed in harmonisation calls in 2015.

For each Unit of Certification (UoC), the most recent scores are tabulated below to show where differences in overall PI exist and where Conditions currently exist or may be raised. During the meeting, for each UoC, one IE led the discussion, working through each SI to check consistency of rationales used and scoring. Where Conditions were identified, consideration was given to harmonising milestones and timelines. However, it should be noted that the meeting was a pilot and that the time available did not allow for a detailed review of all conditions and milestones.

Each UoC is summarized below.



Appendix 2.2 Skipjack tuna

The table below shows the summary of scores from most recent reports available for four UoC.

Date published	Version	Fishery Name	1.1.1	1.1.2	1.2.1	1.2.2	1.2.3	1.2.4	Principle
PCR 2011	FAM v2	PNA - skipjack	100	90	80	60	85*	95	84
PCDR Dec 2015	CR v1.3 (PI1.2.2 use v2)	Trimarine	100	90	70	60	90	95	86.9
PCDR March 2016	CR v1.3 (PI1.2.2 use v2)	Solomon Isl	100	90	70	60	90	95	86.9
CDR August 2015	CR v1.3 (PI1.2.2 use v2)	Japan P&L	100	90	70	60	90	95	86.9
Harmonised	scores	·	100	90	70	60	90	95	

Table 1. Summary of scores in most recent reports for WCPFC skipjack and new scores agreed bythe meeting.

Performance indicator scores with conditions are shown in red text.

*There is full alignment on scores for all SIs for PNA skipjack with the other fisheries (all pass at SG80 and 1 of 2 pass at SG100) but these were combined differently in the PNA assessment to give a score of 85.

Two ongoing assessments are at the PCDR stage, and one is at the CDR stage. Initial harmonisation of these three assessments was carried out during July-September 2015 prior to the development of the two PCDRs. There was good agreement between all IEs, peer reviewers and CABs involved in the harmonisation. The three ongoing assessments differ from the one existing PCR (for PNA unassociated purse seine) which is now due for re-assessment. The changes are due to differences in certification standard used (CR V1.3/2 vs FAM V2), fishery developments over the past five years, but, most importantly, to the considerations of a now larger set of IEs and its interpretation of the CR.

The table below shows for each PI and SI, whether rationales and scores are aligned between the three ongoing assessments, need amendment, etc. The basis for comparison is the most recent, publically available assessment – the Solomon Islands unassociated purse seine assessment published in March 2016. Scores in the Solomon Islands PCDR are shown in brackets in the first column for each PI and SI.

PI (Harmonised score)	SI (Harmonised score)	Issues and workshop conclusions
1.1.1 (100)	A (100)	All reports are in alignment for rationales provided and scores.
	B (100)	All reports are in alignment for rationales provided and scores.
1.1.2 (90)	A (80)	All reports are in alignment for rationales provided and scores.

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	B (100)	All reports are in alignment for rationales provided and scores.
	C (80)	All reports are in alignment for rationales provided and scores. New Information on agreed Target Reference Point (WCPFC CMM 2015-06) needs to be included in updated PCDR and Published Certification Reports (PCR) at appropriate time.
	D (N/R)	All reports are in alignment for rationales provided and scores.
1.2.1 (70)	A (60)	All reports except PNA PCR are in alignment for rationales provided and scores. Consensus on revised scoring.
	B (80)	All reports are in alignment for rationales provided and scores.
	C (60)	All reports except PNA PCR are in alignment for rationales provided and scores. Consensus on revised scoring.
	D (not scored)	All reports are in alignment for rationales provided and scores. No need to score given si(A) and si(C) are less than 80; Japanese Pole and Line CDR needs to be amended to remove existing rationale and score.
	E (N/R)	All reports are in alignment for rationales provided and scores.
1.2.2 (60)	A (60)	All reports are in alignment for rationales provided and scores. Note that discussion on HCR Interpretation, IA Rulings, recently published Maldives Pole and Line 3rd surveillance, etc led to reaffirmation to score using SG60 "availability" criteria as agreed in harmonisation calls in 2015. New Information on agreed Target Reference Point (WCPFC CMM 2015-06) needs to be included in updated PCDR and Published Certification Reports (PCR) as appropriate.
	B (<80)	All assessments except that for Solomon Islands scored and used SI in condition setting. Solomon Islands assessment requires updating.
	C (60)	All reports are in alignment for rationales provided and scores. Note that discussion on HCR Interpretation, E IA Rulings, recently published Maldives Pole and Line 3rd surveillance, etc led to reaffirmation to score using SG60 "availability" criteria as agreed in harmonization calls in 2015. New Information on agreed Target Reference Point (WCPFC CMM 2015-06) needs to be included in updated PCDR and Published Certification Reports (PCR).
1.2.3 (90)	A (100)	All reports are in alignment for rationales provided and scores.
	B (80)	All reports are in alignment for rationales provided and scores.



Appendix 2.3 Yellowfin Tuna

Table 3. Summary of scores from most recent reports for WCPFC yellowfin and new scores agreed by the meeting.

Date published	Fishery Name	Gear(s)	1.1.1	1.1.2	1.2.1	1.2.2	1.2.3	1.2.4	P 1
PCR 4/2/2016	PNA	Purse seine	90	90	70	60	90	95	84.4
PCR 27/08/2015	Walker Seafood	Longline	90	90	70	65	80	100	85.0
PCDR Dec 2015	Trimarine	Purse seine	90	90	70	60	90	95	84.4
PCDR March 2016	Solomon Is.	Purse seine	90	90	70	60	90	95	84.4
Harmonised scores			90	90	70	60	80	95	

Performance indicator scores with conditions are shown in red text.

All used CR v1.3, (v2.0 for PI1.2.2 SG60) except for PNA which used FAM v2.0.

Table 4. Conclusions	s of the pilot harmonisation	for WCPFC yellowfin
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PI (Harmonised score)	SI (Harmonised score)	Issues and workshop conclusions
1.1.1 (90)	A (100)	Scores align. Consensus on evidence to which rationales should refer: Assessments of the likelihood have been variously based on Grid CIs and sensitivity analyses from assessment plus, CIs around spawning potential and recruitment, Likelihood of breaching reference points.
	B (80)	Agreement about scores. Consensus was to refer to the TRP using the words used in CMM 2014-01 & 2015-01, without attaching a label. Borderline for meeting 100 but need to be precautionary consistent with the declining trend, time until the next assessment, recent high catch levels, & outcomes of grid sensitivities.
1.1.2 (90)	A (80)	All reports are in alignment for rationales provided and scores.
	B (100)	All reports are in alignment for rationales provided and scores.
	C (80)	All reports are in alignment for rationales provided and scores. New Information on agreed Target Reference Point (WCPFC CMM 2015-06) needs to be included in updated PCDR and Published Certification Reports (PCR) at appropriate time.
	D (N/R)	All reports are in alignment for rationales provided and scores.
1.2.1 (70)	A (60)	All reports are in alignment for rationales provided and scores.
	B (80)	Agreement on scores. Key points in rationales are current status (B & F), projections, and effort constraint by VDS. Effectiveness of FAD measures is also relevant. Impact of coastal fisheries needs to be given greater consideration and potential for CMMs to control these components, but PS sector still has the greater impact.



PI (Harmonised score)	SI (Harmonised score)	Issues and workshop conclusions
		Downward trend in biomass indicates the need to carefully examine future catches and effort, and results of the next assessment. Was considered to be too early to assess impacts of the most recent CMM.
	C (60)	All reports are in alignment for rationales provided and scores.
	D (not scored)	Only SG100; not all SG80 met
	E (N/R)	All reports are in alignment for rationales provided and scores.
1.2.2 (60)	A (60)	Agreement on scores. Rationales differ in level of detail but there are no important inconsistencies
	B (80 not met ¹⁰)	All assessments except that for Solomon Islands scored and used SI in condition setting. Solomon Islands assessment requires updating. Consensus that a key point in the rationale should be that, because the HCR is not defined, the consideration of uncertainties is not clear. Measures to implement effort limitations are also unspecified.
	C (60)	Scores for Walker Seafood determined before Nov 2015 guidance from MSC. Rationales for other fisheries are consistent.
1.2.3 (80)	A (80)	Consensus for a score of 80 based on concerns about the quality of the data that are available (e.g. the absence of fishery- independent data) and the importance of the generic data gaps identified by Williams (2013).
	B (80)	Scores agree but there are differences in the rationales. Consensus that in future rationales could be more closely aligned to the data needs of the HCR.
	C (80)	Scores and rationales align
1.2.4 (90)	A (100)	Scores agree and rationales are similar
	B (100)	Scores and rationales are in agreement.
	C (100)	Scores and rationales are in agreement.
	D (100)	Scores and rationales are in agreement.
	E (80)	Consensus score of 80 with agreement that there has been no formal external review for YFT.

¹⁰ Note: The agreed version of the meeting report has 80 here, but this was confirmed to be a typo.



Appendix 2.4 South Pacific albacore

Table 5. Summary of scores from most recent reports for WCPFC South Pacific Albacore and new scores agreed by the meeting.

Date published	Fishery Name	Gear	1.1.1	1.1.2	1.2.1	1.2.2	1.2.3	1.2.4	P1
PCR June 2011	NZ albacore	p&l	100	75	80	60	80	85	81.9
PCR 24 Dec. 2012	AAFA & WFOA albacore - south	p&l	100	70	80	60	90	85	81.9
PCR Nov. 2012	Fiji albacore	longline	100	75	70	60	80	85	80.6
PCR June 2015	SZLC, CSFC & CFA Cook Islands albacore	longline	100	75	70	60	80	85	80.6
PCR Aug. 2015	Walker Seafood - albacore	longline	100	75	70	60	80	95	81.9
Harmonised scores			100	75	70	60	80	95	

Performance indicator scores with conditions are shown in red text.

Table 6. Summary of outcome by SI for WCPFC South Pacific albacore

PI (harmonised score)	SI (harmonised score)	Issues and workshop conclusions
1.1.1 (100)	A (100)	Consensus. Updated to 2015 stock assessment
	B (100)	As above
1.1.2 (75)	A (80)	Consensus
	B (100)	Consensus since limit ref. point is agreed – consistent with other stocks
	C (-)	Fiji and NZ scored 80 as met, but since then stock assessments have shown that B_{MSY} cannot be used as a target (because it is below the agreed limit) – hence no suitable target in place although some options are under discussion. Consensus that 80 is not met (no 60 available). Fiji and NZ to harmonise scores and conditions at next surveillance.
	D (N/A)	
1.2.1 (70)	A (60)	SG60: Consensus that 2014-06 provides a framework in place hence 'expect' to achieve objectives is met as per SG60 (this is consistent with other stocks); Tokelau Arrangement also provides some reassurance. SG80: Consensus that 80 not met as per the other stocks – situation is similar or a little worse.
	B (80)	Consensus – aligned across stocks
	C (60)	Consensus
	D (-)	Consensus
1.2.2 (60)	A (60)	Consensus – aligned across stocks. Rationales need to be aligned with commentary about using the 'availability' logic from version 2.0 and Dec. 2015 guidance. This can be done at re-



PI (harmonised score)	SI (harmonised score)	Issues and workshop conclusions
		assessment. Examples from skipjack and Maldives 3 rd surveillance audit report for 2016.
	В (-)	Consensus
	C (60)	Consensus – need to revise rationales as for SI a
1.2.3 (80)	A (80)	Consensus
	B (80)	Consensus. AAFA previously scored 100 for this issue – may need to adjust (but makes no material difference)
	C (80)	Consensus. Discussion about change in stock assessment to cover only WCPFC Convention Area might affect this scoring, but agreement that does not jeopardise robustness of assessment.
1.2.4 (95)	A (100)	Aligned with yellowfin. AAFA, Fiji, NZ and Cooks may need to adjust scoring at a suitable opportunity (previously 80) but makes no material difference.
	B (60)	Consensus
	C (100)	Consensus
	D (100)	Consensus that the key issue is that assessment conclusions and management advice is robust – all in the 'green zone'. Score of 100 would align with the other stocks (NPA, SKJ, YFT). The group was not completely comfortable with assigning a score since most participants were not familiar with the stock assessment in detail. 100 was provisionally agreed but consensus that the P1 expert for the upcoming NZ re-assessment may decide differently.
	E (80)	Aligned with other stocks



Appendix 2.5 North Pacific Albacore

Table 7. Summary of scores from most recent reports for three North Pacific albacore UoC and new scores agreed by the meeting.

CR version	Fishery Name	Gear(s)	1.1.1	1.1.2	1.1.3	1.2.1	1.2.2	1.2.3	1.2.4	P1
CR v1.2	AAFA & WFOA Pacific albacore tuna - north	Handlines , pole lines, Trolling lines	100	70	-	85	60	100	95	85
CR v1.3 (PI1.2.2 use v2)	CHMSF British Columbia Albacore Tuna North Pacific	Trolling lines	100	70	-	90	60	90	100	85
CR v1.3 (PI1.2.2 use v2)	Japanese pole & line	Pole and line	100	70		80	60	90	100	83.8
Scores after harmonisation Day 2		100	70		80	60	90	100		

Performance indicator scores with conditions are shown in red text.

Table 8 shows for each PI/SI, whether scores and rationale are aligned between the 3 assessments or need to be amended for harmonization. The basis for comparing scores and rationales is the most recent CHMSF assessment published in June 2015. Scores for the CHMSF assessment are shown in brackets for PI and SI.



Table 8. Summary of outcome by SI for North Pacific albacore

PI (harmonised score)	SI (harmonised score)	Issues and preliminary conclusions
1.1.1 (100)	A (100)	All reports are in alignment for scores but use different approaches in justifying scores.
		It was suggested that alternative graphical displays could be considered in the CHMSF report.
	B (100)	All reports are in alignment for rationales and provided scores
1.1.2(70)	A (80)	All reports are in alignment for scores.
		Since the WCPFC adopted at its 8 th Annual Session a hierarchy of SSB LRPs, with the lower Level default being 20% SSBB _{<i>F</i>=0} .
		Rationales for CHMSF and WFOA/AAFA can be aligned
	В (-)	All reports are in alignment for scores (80 N; 100 N) but use different approaches in justifying scores. The WCPFC LRP should be updated to $20\%SB_{F=0}$
	C (-)	All reports are in alignment for scores (80 N; 100 N) but use different approaches in justifying scores.
		NB Score for all the three fisheries for PI 1.2.2 should be 65
	D (N/R)	All reports are in alignment for rationales and provided scores
1.2.1(90)	A (80)	All reports are in alignment for scores but use different approaches in justifying scores
	B (80)	All reports are in alignment for scores but use different approaches in justifying scores
	C (60)	All reports are in alignment for rationales and provided scores
	D (100)	Japanese P&L denies 100 score. AAFA/CHMSF score at 100.
		Since no harvest strategy has been formalized and it is not subject to a formal review process the score of 100 is not justifiable. Alignment is needed.
1.2.2(60)	A (60)	All reports are in alignment for rationales and provided scores
		In scoring issue (A) the rationales need to explicitly state which elements of SA2.5.2 and SA2.5.3 are used.
		Note that discussion on HCR Interpretation, E IA Rulings, recently published Maldives Pole and Line 3 rd surveillance, etc led to reaffirmation to score using SG60 "availability" criteria as agreed in harmonization calls in 2015. It was agreed to follow the logic used for the other stocks.
	В (-)	All reports are in alignment for rationales and provided scores


PI (harmonised score)	SI (harmonised score)	Issues and preliminary conclusions
	C (60)	All reports are in alignment for rationales and provided scores
		In SI (C) the rationales need to explicitly state which element (a or b) of SA2.5.5 is used.
		Note that discussion on HCR Interpretation, E IA Rulings, recently published Maldives Pole and Line 3 rd surveillance, etc led to reaffirmation to score using SG60 "availability" criteria as agreed in harmonization calls in 2015. It was agreed to follow the logic used for the other stocks.
1.2.3(90)	A (100)	All reports are in alignment for scores but use slightly different approaches in justifying scores – needs to be attended to.
	B (80)	Because there are some sources of uncertainty such as the absence of updated estimates of life history parameters, and the simplified treatment of the spatial structure of north Pacific albacore population dynamics, it was agreed that the fishery does not meet the SG 100 as scored by the AAFA/WFOA. A score of 80 was agreed during the meeting.
	C (80)	All reports are in alignment for rationales and provided scores
1.2.4(100)	A (100)	All reports are in alignment for rationales and provided scores
	B (60)	All reports are in alignment for rationales and provided scores
	C (100)	All reports are in alignment for rationales and provided scores
	D (100)	All reports are in alignment for rationales and provided scores
	E (100)	AAFA/WFOA only scored 80 as no external review of the stock assessment was done. The CHMSF and Japanese P&L scored 100, noting the 2011 assessment was externally reviewed by CIE. Agreed to score as 100.



Appendix 2.6 Harmonisation meeting participants

Attendee	Organisation/Representing
Sandy Morison	SCS
Sian Morgan	SCS
Max Stocker	MRAG/SAI
Kevin Stokes	Acoura
Adrian Gutteridge	MSC
Bill Holden	MSC
Stephanie Good	MSC
Suzi Keshavarz	MSC
Peter Watt	MEC
Steve Kennelly (Facilitator)	ICIC
Fong Lee	South Seas Tuna Corporation Limited
Ronald Lo	South Seas Tuna Corporation Limited
Chris Hsu	South Seas Tuna Corporation Limited
Bob Trumble	MRAG
Kenji Matsunaga	Meiho Gyogyo KK
Andrias Hermawan	Meiho Gyogyo KK
Jo Akroyd	Acoura
Dave Japp	MSC
Maurice Brownjohn	PNA
Ivan Mateo	SAI Global
Antonio Hervas	ASI
Roland Salangsang	DD Corporation/Philbest Canning
Bayani Fredeluces	RD Fishing Group
Arnel Gonato	RD Fishing Group
Jo Gascoine	MEC



Appendix 3 Peer Review Reports

Appendix 3.1 Peer review 1

Summary of Peer Reviewer Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?	Νο	CAB Response
<u>Justification:</u> While the overall conclusion by the assessment tea the fishery is most likely appropriate, some scores u may alter (mainly positively) due to new or latest inf as stated in the peer review below. Please refer to r comments in below table (Table 1) as they potential revision of scores which could alter the outcome for 2.	Please see our detailed responses to the comments below.	
		÷
Do you think the condition(s) raised are	Yes	CAB Response

appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCR 7.11.1 and sub-clauses]	165	CAD Response
<u>Justification:</u> While the Conditions raised are mainly thought to b achieve SG80 within the timeframe specified, it is recommended that Conditions 5, 6 and 7 specificall the need to improve species identification (especial by crew and observers which should contain ongoir and monitoring to judge level of confidence within the identification of these species.	e able to ly mention ly seabirds) ng training ne	Please see our detailed response to your comments under 2.3.1 and 2.3.3

Do you think the client action plan is sufficient to close the conditions raised? [Reference FCR 7.11.2-7.11.3 and sub-clauses]	Yes	CAB Response
<u>Justification:</u> The level of information and detail contained in the generally sufficient to close the conditions raised. H there is some amendments recommended, which c Conditions 5, 6 and 7 regarding identification of sea species. These slight amendments include the use photo identification of all seabirds which can be ser experts (eg. birdlife?) either real time or trip compl expert identification. This should also be ongoing w for crew and observer throughout the fishery on at I annual basis. With regard to Conditions concerning these should clearly include and state not just seab French Polynesia, but also migratory seabirds that a transiting the area inclusively.	CAP is lowever, oncern ubird of ongoing at to seabird etion, for ith training east an g seabirds, irds of are	The peer reviewer's suggestions have been passed on to the client and have been incorporated into the Client Action Plan as appropriate.



Performance Indicator review

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.1.1	Yes	Yes	NA	For WCPO stock: This peer review did not consider Principle 1 elements since there had recently (April 2016) been a detailed harmonisation meeting between all relevant CABs and MSC who had previously completed MSC assessments on tuna species within the WCPO. This harmonised assessment was agreed to be all CABs and MSC present and has been subsquently peer reviewed. Therefore, there was no reason to repeat yet another peer review of this process and outcomes. For EPO stock: The level of information and clear justifcation provided warrants the awarded scores.	No comment needed



1.1.2	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed
1.2.1	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed
1.2.2	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed
1.2.3	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed
1.2.4	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed
2.1.1	No	No	NA	 Bigeye Tuna: Since the development of this report, there has been an updated Bigeye tuna assessment conducted for the WCPO. This new assessment is much more optermistic than previous assessments. Bigeye tuna, up until recently, was considered significantly overfished (representing around 16 – 18% spawning stock biomass) and overfishing was occurring. However, the latest 2017 assessment along with revised biological data for BET, has shown the last assessments to 	Thank you – this updated assessment has now been taken into account. The levels of uncertainty in this new assessment are however higher than in the Harley et al. (2014) assessment which means that SG100 remains not met. Please see our rationale as well the discussion on the new stock assessment in Section 2.4.3.3. As far as the team is aware, Aires- da-Silva et al. (2017) remains the most recent stock assessment for EPO bigeye. This assessment has already been taken into account.



	be inaccurate and as a consequence there has been a significant improvement in the BET stock status. The BET stock in the WCPO is no longer considered overfished and overfishing is not occurring. It is estimated that the spawning stock biomass is around 33% but could be as high as 40%. At the recent thirteenth session of the Scienctific Committee meeting of the WCPFC held at the Cook Islands, J. Farley (CSIRO, presented SC13-SA-WP-01 Projec 35: Age, growth and maturity o bigeye tuna in the western and central Pacific Ocean. This was a new study which described a regional study of bigeye tuna population biology. The objectives of this study were to estimate the growth of BET in the WCPO and examine spatial variation in growth for application in regional stock assessment models. In addition, the project aimed to determine the reproductive status and maturity-at- length/age of bigeye in the WCPO (WCPFC SC 13). At the same meeting, project SC13-SA-IP-20 <i>Summary of major changes in the</i> 2017 tropical tuna assessments was presented. The major changes from the 2014 stock assessments for bigeye and yellowfin tunas to those undertaken in 2017 were	The scoring for this PI has not changed. The team would also like to point out that in this PI the cumulative approach is only called upon in the event where a stock is below the PRI at SG80. As this is no longer the case for WCPO bigeye, the cumulative analysis was removed, although it is still there for EPO bigeye. For ETP species, the cumulative approach only applies to those cases where there are 'limits' (as per PI 2.3.1, scoring issue a). As there are no 'limits' in place for any of the ETP species considered, the cumulative approach was not applied.
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		 summarised, in particular those changes to assessment data and model structure. (WCPFC SC 13). The results of these projects were used in the latest 2017 stock assessment for BET conducted by SPC. The stock assessment contained a further three years of data since the last assessment in 2014. There were several new developments to the stock assessment, these included: addressing the recommendations of the 2014 stock assessment report, incorporation of new data such as a recent ageing of otoliths to estimate age-at-length for WCPO fish, 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 improvement of diagnostic weaknesses of previous assessments. (WCPFC SC 13) 	
		The latest stock assessment was endorsed by SC 13 as the most advanced and comprehensive assessment yet conducted for this species.	



				It should be noted that the peer reviewer has not had time to investigate whether this new biological information from the WCPO BET stock also pertains to the EPO BET stock and therefore what, if any, implications it may have on the EPO stock status and this fishery. it is recommended that the assessor investigate the impact of this data on EPO BET. For WCPO BET stock it is expected that this would now score SG100 level and therefore may alter the overall scores for this PI. It is good to see the assessors considering BET cumulative effects from all MSC certified fisheries. It is highly recommended that the assessors do the same for other P2 species (particularly ETPs).	
2.1.2	Yes	no	NA	While it is recognised that there is a draft management plan in place and that it has been under development for four years, it cannot be stated that there is currently a formailsed mamgement plan in place for the fishery. nor can it be justifed that that there is a "general fisheries management strategy" in place. As such the cap (75) on number of licences refered to as a "startegy"	The team has reduced the overall scoring for this PI from 90 to 85 with the justification that a partial strategy is in place rather than a strategy.



		While the assessment makes mention of the countries management arrangements for these species, there is no mention, or any indication, concering the Conservation Management Measures (CMMs) in palce at the regional level set by WCPFC and IATTC for these species. It is critical to the scoring and justificiation of this assessment that the CMMs of these RFMOs be provided and considered in this PI and through out as majoirty of the species listed and considered by this assessment are considered highly migratory throughout the region.	primary species are described in Section 'Status and management of main bycatch species' in the man report. Explicit reference to this section has been added.
		Under shark finning, it is understood that all sharks are considered as ETP, and therefore the assessor has stated that for both primary and secondary PIs that this scoring issue is not relevant as sharks are assessed as ETPs. However, there is data from other WCPO fisheries catching ETP shark species and finning occuring. Therefore, while it is unlikely to occur in this fishery, the assessors should investigate whether there is any data on shark finning, including non-complaince and level of compliance and enforcement on this fishery for this particualr issue, especially given that they do catch	Indeed, as sharks are considered as ETP, the level of compliance with the regulations (i.e. the Code de l'Environnement) that designate sharks as ETP is considered under PI 2.3.2. These regulations include a ban on shark finning in the French Polynesia EEZ. During site visit interviews with a wide range of stakeholders, shark finning was not a cause for concern in this fishery. There have equally been no issues with non-compliance in relation to shark finning. However, the peer reviewer's concerns are noted and the following statement has been added to PI 2.3.2 (d): <i>during site</i> <i>visit interviews with a wide range of</i>





		sharks and there is mortiality associated with the capture. There is a gap in knowledge and data regarding this issue.	stakeholders (see Section 3.4.1), non-compliance with the Code de l'Environnement (which declares the French Polynesia EEZ as a shark, whale and seaturtle sanctuary) was not a cause for concern in this fishery. The DRMM equally reported no issues with non-compliance in relation to the Code de l'Environnement. Overall, whilst there is no evidence that the measures described in SIa are not being implemented successfully, the observer coverage in this fishery is currently too low to provide evidence that this is indeed the case.
		Regarding bait, the assessment team concluded that there was a "partial startegy" in place through the cap of licences in the fishery. However, despite the fact that the cap is not a binding mangement arrangment and that it was clearly stated in the report that the fishery may choose to expand harvest in the future, it would suggest that the current arrnagements in the fishery for bait is more classed as a "measure" than a "partial stratgey". Therefore the peer reviewer believes that SG 60 is met for bait, but not SG 80.	The team would like to stress that the cap of licenses was not a factor in whether or not a partial strategy is in place for bait. The team instead considered that the low bait use relative to the total catch and stock size, together with the fact that the volume of bait use is known and that each bait species has a stock assessment, was sufficient to act as a partial strategy, ensuring that the fishery does not hinder rebuilding of the bait species at/to levels which are highly likely to be above the point where recruitment would be impaired. The scoring has not been changed, however the justification has been made more robust.



2.1.3	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed
2.2.1	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed
2.2.2	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed
2.2.3	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed
2.3.1	Yes	Yes	Yes	The condition as stated requires to be expanded to ensure that it addresses directly the issues associated with poor identification of seabirds by the fishery and its observers. Without robust identification, it will not be possible to achieve the condition and establish accurate reporting or data records and thus not possible to implement appropriate management action if required. It should be noted that the CAP has addressed this issue with their planned actions, however, it must be explicitly stated in the set conditions of certification.	 Please note that as a CAB we cannot be prescriptive in our wording of conditions, which must closely follow the wording of the scoring guideposts. 7.11.1.2: The CAB shall draft conditions to follow the narrative or metric form of the PISGs used in the final tree The issues with identification are clearly described in the rationale which underpins this condition and as such have been picked up by the client as demonstrated through the Client Action Plan. The wording of the condition has not been changed.





2.3.2	Yes	Yes	Yes	The stated condition raised, should improve the fishery performance to the SG80 level.	No comment needed.
2.3.3	Yes	Yes	Yes	The condition as stated requires to be expanded to ensure that it addresses directly the issues associated with poor identification of seabirds by the fishery and its observers. Without robust identification, it will not be possible to achieve the condition and establish accurate reporting or data records and thus not possible to implement appropriate management action if required. It should be noted that the CAP has addressed this issue with their planned actions, however, it must be explicitly stated in the set conditions of certification.	Please see our response to your comment under 2.3.1
2.4.1	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed.
2.4.2	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed.
2.4.3	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed.
2.5.1	Yes	Yes	NA	The level of information and clear justifcation provided warrants the	No comment needed.



				awarded scores.	
2.5.2	Yes	Yes	NA	The level of information and clear justification provided warrants the awarded scores.	No comment needed.
2.5.3	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed.
3.1.1	Yes	Yes	NA	The level of information and clear justification provided warrants the awarded scores.	No comment needed.
3.1.2	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed.
3.1.3	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed.
3.2.1	Yes	Yes	Yes	The level of information and clear justification provided warrants the awarded scores. The stated condition raised, should improve the fishery performance to the SG80 level.	No comment needed.
3.2.2	Yes	Yes	Yes	The level of information and clear justification provided warrants the awarded scores. The stated condition raised, should improve the fishery performance to the SG80 level.	No comment needed.



3.2.3	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed.
3.2.4	Yes	Yes	NA	The level of information and clear justifcation provided warrants the awarded scores.	No comment needed.



Appendix 3.2 Peer review 2

Summary of Peer Reviewer Opinion

Has the assessment team arrived at an appropriate conclusion based on the evidence	Yes	CAB Response
<u>Justification:</u> All evidence has been taken into account to arrive a scores given. The criteria for MSC certification and methodology described in FCR version 2.0, for the default assessment tree, has been rigorously follow certifier. In the few instances where a score has been in this review, the alternative score is unlikely to affer outcome of the overall assessment.	at the the general red by the en queried ect the	Thank you



Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe? [Reference: FCR 7.11.1 and sub-clauses]	Yes	CAB Response			
<u>Justification:</u> Condition 1 (1.2.1a – harvest strategy for SP albacc Condition is appropriate and the 4-year timeframe is reasonable.	pre): S	Condition 8: the DRMM is an integral part of government and in fact plays a central role in the development of the fisheries management plan which is long overdue. Based on discussions with			
Condition 2 (1.2.2a-c – HCRs for SP albacore): Appropriate. Overlaps with Condition 1, and 4-year is reasonable.	dition 2 (1.2.2a-c – HCRs for SP albacore): ropriate. Overlaps with Condition 1, and 4-year timeframe asonable.				
Condition 3 (1.2.1a – harvest strategy for WCPO ye Appropriate and can be achieved in 4 years.	llowfin):				
Condition 4 (1.2.2a-c – HCRs for WCPO yellowfin): Appropriate and aligned with the WCPFC harvest st workplan, to be achieved over 4 years. Work done f Condition 3 will also apply to Condition 4.	trategy or				
Condition 5: (2.3.1b - direct effects on ETP species Condition and 4-year time frame is appropriate.):				
Condition 6 (2.3.2d – management strategy implem Condition appropriate and actionable over 3 years.	entation):				
Condition 7 (2.3.3a-b – information on impact on ET species): Appropriate with 4-year timeframe.	Р				
Condition 8 (3.2.1 – fishery-specific management pl objectives): Condition appropriate, but timeframe might be too s Client can only indirectly influence the legal / govern process.					
Condition 9 (3.2.2b – responsive decision-making p Condition appropriate and timeframe of 4 years suff	rocess): icient.				

Do you think the client action plan is sufficient Yes to close the conditions raised?	CAB Response
[Reference FCR 7.11.2-7.11.3 and sub-clauses]	
Justification: Condition 1: CAP sufficient to close condition.	Condition 6: thank you for spotting this, we will revert to the client for correction.
Condition 2: CAP sufficient to close condition –some activities shared with Condition 1, and similar time-frame proposed.	Condition 8: please see our response to Condition 8 above.
Condition 3: CAP sufficient to close condition – client will undertake same general actions as in CAPs 1 & 2 above.	
Condition 4: CAP closely linked to the previous one (for condition 3) and some actions proposed previously won't be repeated below but they also apply to this section. Appropriate.	



Condition 5: CAP is comprehensive and sufficient to close the condition over 4 years.

Condition 6: CAP is sufficient to close the condition but there is some confusion regarding the time frame (3 years or 4 years?) both are mentioned.

Condition 7: See CAP for Condition 5. Appropriate and should close out the condition over 4 years.

Condition 8: CAP is sufficient to close condition but a 2-year timeframe might be unrealistic. Client does not control governmental process – these are often long and drawn-out, especially when there are international negotiations included (i.e. France)

Condition 9: See CAP for Condition 1. Appropriate and should close out the condition over 4 years.



Performance Indicator Review

Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
1.1.1	Yes	Yes	NA	UoA1 SP Albacore: The certifier gave a score of 100 for this PI. At SG100, the criteria are that there is a high degree of certainty that (a) the stock is above PRI, and (b) that it is fluctuating or above MSY in recent years. Recruitment trends have not changed over time based on recent stock assessments, and SB estimates remain above 40% of SB ₀ (Reference point = 20% of SB ₀). The stock has been above the MSY level for the duration of the fishery. The score of 100 agrees with the harmonization score across all WCPFC stocks with certified fisheries hosted by MSC in 2016. UoA2 Yellowfin WCP: Overall score of 90 for the PI, based on (a) a high degree of certainty that the stock is above PRI- score 100. For scoring indicator (b), SB/SB _{MSY} and F/F _{MSY}	No comment needed.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				do not quite meet the requirements of a high degree of certainty (i.e. 95% probability). Scores agree with harmonized scores. UoA3 Yellowfin EPO: Same as for UoA2 above. For (b) the stock is fluctuating around MSY, but not with a high degree of certainty. Scores agree with harmonized scores.	No comment needed.
1.1.2	Yes	Yes	NA	No rebuilding required	No comment needed.
1.2.1	Yes	Yes	Yes	UoA1 SP Albacore: The certifier gave an overall score of 70 for this PI, based on scoring issues (a) harvest strategy expected to achieve stock management objectives-60; (b) Harvest strategy not fully tested but evidenced that it is achieving its objectives -80; (c) monitoring in place – met at 60; (d) harvest strategy review – not met at	No comment needed.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				 100. Harvest strategy needs to be better defined, elements working together and responsive to state of the stock (see Condition 1). UoA2: Yellowfin WCP; Overall score of 70 given for this PI with the same justification than for UoA1 above. Condition 3 is appropriate. UoA3: Yellowfin EPO: The overall PI score is given as 85 (but should be 90?) based on (a) a harvest strategy designed to achieve stock management objectives-100; (b) evidence existing that the strategy is achieving its objectives -80; (c) monitoring met at 60 and (d) review met at 100. 	No comment needed. The overall score is given as 90 and should in fact be 95! Thank you, this has been corrected.
1.2.2	Yes	Yes	Yes	UoA1 Albacore: The certifier gave an overall score of 60 for this PI, based on scoring issues (a) HCRs available and expected to work-60;	No comment needed.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				(b) HCRs are not 'in place' and therefore not robust – not met at 80; (c) there is evidence that 'available' HCRs are appropriate and effective-60. Scores have been harmonized. Condition 2 is appropriate, i.e. the HCRs must be refined, 'in place' to ensure that exploitation rate is reduced when PRI is approached.	
				UoA2 Yellowfin WCP: Scores and justifications are the same as for UoA1 above. Condition 4 is appropriate.	No comment needed.
				UoA3 Yellowfin EPO: The certifier gave an overall PI score of 80, but this should be 85 based on the scoring criteria stated on page 85 of the assesssment. The scoring issues were: (a) well-defined HCRs in place keeping the stock fluctuating around an MSY level-80; (b) HCRs likely to be robust, but some uncertainties remain-80;and	The peer reviewer is correct, the score should be 85 – this has been corrected.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				(c) there is evidence that tools are effective in achieving exploitation levels aligned with HCRs-100.	
1.2.3	Yes	Yes	NA	UoA1 Albacore; An overall score of 80 was given, based on (a) sufficient information collected to support the harvest strategy-80; (b) regular monitoring but with some uncertainties remaining -80; and (c) good information on other fishery removals. Scores of all 3 scoring issues have been harmonized.	No comment needed.
				UoA2 Yellowfin WCP: Scores and justifications are the same as for UoA1 above.	No comment needed.
				UoA3 Yellowfin EPO: Scores and justifications are the same as for UoA2.	No comment needed.
1.2.4	Yes	Yes	NA	UoA1 Albacore; An overall score of 95 was given by te certifier, accounting for (a) an appropriate	No comment needed.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				assessment for the stock, taking major features into account-100; (b&c) estimation of stock status and uncertainty relative to appropriate reference points in a probabilistic way-100; (d) assessment and alternative approaches explored (100) and peer reviewed internally, but not externally (80). All scoring issues have been harmonized. UoA2 Yellowfin WCP: Scores and justifications are the same as for UoA1 above.	No comment needed.
				UoA3 Yellowfin EPO: An overall score of 95 given for the PI, based on (a) an appropriate assessment for the stock under consideration- 100; (b) an approach that estimates stock status relative to reference points-100; and (c) accounting for uncertainty in a probabilitic way- 100. Scoring issue (d) failed at SG100, because the assessment output is sensitive to assumptions –	No comment needed.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				and therefore not robust. Issue (e) – peer review internally and externally is fully met - 100.	
2.1.1	Yes	Yes	NA	An overall PI score of 90 was given by the certifier for the stock status of primary species categorized as (a) main and (b) minor species. Each of the 3 UoAs also scored 90. All main species (8) met SG80, and 2 main species met SG100. None of the minor species were below the PRI.	No comment needed.
2.1.2	Yes	Yes	NA	An overall score of 90 was given (also per UoA) based on (a) having a management strategy in place- SG80 met, some species met at SG100; (b) with objective basis for confidence that it will work –SG80; and (c) evidence that it is implementedc successfully and achieving its objectives-100.	No comment needed.
2.1.3	Yes	Yes	NA	The PI was scored at 95 (overall	No comment needed.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				and for each of the 3 UoAs). Scoring issues met SG100 for information adequacy for (a) main species and (b) minor species. Information adequacy for management strategy (c) met SG80 because only a partial strategy is in place for bait species.	
2.2.1	Yes	Yes	NA	PI scored at 90.No main secondary species present, thus (a) met by default. Stock status of minor secondary species (b) unknown in many instances, thus SG100 not met.	No comment needed.
2.2.2	Yes	Yes	NA	PI scored at 90. (a) Management strategy in place for main and minor secondary species-SG100 met; (b) evaluated with objective basis for confidence that it will work but has not been tested to support high confidence-80; (c) there is clear evidence of its implementation-	No comment needed.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				SG100 met. For Scoring issue (e), there is no biennial review of alternative measures to reduce unwanted catch of minor secondary species – thus SG100 not met.	
2.2.3	Yes	Yes	NA	PI scored at 95. For information adequacy, there are no main secondary species so (a) met by default. For (b) SG100 is not met because information for minor secondary species is lacking. For (c) management strategy information is adequate to support a strategy to manage all secondary species, with high degree of certainty – 100.	No comment needed.
2.3.1	Yes	Yes	Yes	PI scored at 75 and Condition 5 raised. Direct (b) and indirect (c) effects are unlikely to hinder the recovery of ETP species, because of low numbers of interactions (turtles, birds, most shark species,	No comment needed.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				mammals), but there remains some uncertainty because of data gaps. Condition 5, to increase the evidence base for determining interaction rates with ETP species, so that trends can be evaluated, is appropriate.	
2.3.2	Yes	Yes	Yes	PI for management startegy scored at 75 and Condition 6 raised. For scoring issue (a) SG100 was not met because the management strategy in place does not have a systematic review of ETP interactions, and is therefore not considered comprehensive. (c) Although an objective basis for confidence exists that the strategy works (SG80), quantitative info at population level of ETP species lacks. (d) Although there is some evidence that the management strategy is being implemented (i.e. from observer data; potentially meeting SG80), the certifier has	No comment needed.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				focussed on instances where this does not occur to arrive at a fail at SG80. Condition 6 – evidence that ALL regulations on interactions with ETP species are adhered to – is appropriate.	
2.3.3	Yes	Yes	Yes	The certifier gave an overall PI score of 60 for information adequacy, and raised Condition 7. (a) The information is insufficient to evaluate the impact of the fishery on ETP species – 60; and (b) also insufficient to measure trends and support a strategy to manage impacts on ETP species – 60. For instance, post-release mortalities are unknown and population level data lacking on sharks an other ETP spp. Condition 7 – improving the evidence base on interactions with ETP species so that trends can be measured over time – is appropriate.	No comment needed.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
2.4.1	Yes	Yes	NA	PI score of 100 given. A pelagic fishery in deep water is unlikely to affect benthic habitats.	No comment needed.
2.4.2	Yes	Possibly	NA	PI score of 95 given based on the nature of the fishery. Unclear why (a) management strategy in place – does not meet SG100. The fishery takes place in a pelagic habitat and is "extremely unlikely" to affect benthic habitats. The strategy itself is therefore to retain the status quo in terms of gear used – i.e. buoyed longlines with hooks to ensure the fishery stays in the pelagic realm. The term "extremely unlikely" is equivalent to "a high degree of certainty", i.e. SG100. The stumbling block here is the definition of strategy . Is there one? Yes. Is it explicitly stated? Maybe not. Semantics?	Whilst impacts are indeed highly unlikely, SG100 needs a strategy put in place for the habitats component specifically. Whilst the team agrees that this is unfortunate for a pelagic longline fishery, SG100 cannot be met without a strategy. Possibly yes, semantics. The scoring was not changed.
2.4.3	Yes	No	NA	The PI score of 85 given for information quality does not take	The team agrees with the peer reviewer that this is an illogical



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				the nature of the fishery into account. The justification for not meeting SG100 in scoring issue (a) can be debated. The distribution of the pelagic habitat (and its various zones; epipelagic; mesopelagic etc.) is indeed known from bathymetric profiles. None of these habitats are vulnerable to the gear used by the UoAs. It is difficult to conceive any score below SG 100 for (a). Similarly the logic does not hold in (c). viz the statement that "SG100 is not met because such measurements are not necessary in the fishery". If it is not necessary, there should not be a penalty for not doing the monitoring. Indeed, what exactly would one monitor?? It is suggested that the PI is re- scored.	outcome for a pelagic longlline fishery; however SG100 demands the distribution of <u>all</u> habitats to be known over their range, irrespective of the type of fishery under assessment. It is therefore rare that this will ever be met for any type of fishery! The PI was not rescored.
2.5.1	Yes	Yes	NA	The PI score of 80 reflects that (a) it is highly unlikely that ecosystem status will be affected by the	No comment needed.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				fishery, but (b) that there is no formal evidence to support the conclusion.Met at SG80.	
2.5.2	Yes	Yes	NA	The PI score of 85 for management strategy reflects the presence of (a) a partial strategy – 80 that has not been (b) tested at high confidence level - 80. (c) The partial strategy of restraining ecosystem impacts is implemented, by capping fishing effort. SG100 met.	No comment needed.
2.5.3	Yes	Yes	NA	Overall PI score for information adequacy of UoA impacts on ecosystems given as 95. (a) Ongoing data collection; (b investigation through ecosystem models; and (c) understanding of component functions are done at a high level and all are met at SG100. (d) Monitoring meets only SG80 because of the absence of an ecosystem management strategy.	No comment needed.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
3.1.1	Yes	Yes	NA	Overall PI score for the legal and/or customary framework is 85, based on scoring issues (a) compatibility of laws or standards with effective management -100; (b) resolution of disputes for local, but not at regional level-80; and (c) respect for rights, although this is not formally committed in local law-80.	No comment needed.
3.1.2	Yes	Yes	NA	Overall PI score for consultation, roles and responsibilities is 85, based on scoring issues (a) roles and responsibilities explicitly defined and well-understood for key areas (but some doubt at local level)-80; (b) consultation processes exist that regularly seek and accept relevant information (but not always explained how the info is used at local level); and (c) participation is encouraged and facilitated – 100.	No comment needed.
3.1.3	Yes	No	NA	Overall PI score for management	This performance indicator looks at



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				policy and objectives is 90, based on scoring issue (a) clear long-term objectives which are explicit within management policy. Whether the PI is scored at 80 or 90 hangs on the interpretation of"and required by management policy". Technically, French Polynesia does not yet have a local management plan in law, and subscribes to WCPFC policy and objectives – which are clear and explicit, but regional. SG80 is therefore met, but it is doubtful if much of SG100 will be met. The certifier might consider 80 as a safer option than 90, especially given the justification given in PI 3.2.1 right after.	management policy outside the specific UoA (i.e., at a higher level or within a broader context than the fishery-specific management system) (see FCRv2.0 SA4.5.1). Also MSC guidance GSA4.5 states: '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 organisation'. In the context of this fishery, the team therefore considered the regional, WCPFC level for the scoring of this PI. The scoring has not changed.
3.2.1	Yes	Yes	Possibly	The PI score for the objectives of the fishery-specific management system meets SG60 only, and Condition 8 is raised. The score	The DRMM is an integral part of government and in fact plays a central role in the development of a fisheries management plan which is



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				reflects that there are broad objectives implicit in the management system, but they are not explicitly stated and some of them are not clear, particularly in the absence of a fishery development white paper. The proposed condition will be appropriate, if it is implemented, but the problem is that this is a governance / political process, which can only be indirectly influenced by the client – through exerting pressure. The process will likely need to go through many steps, potentially taking several years to complete. The milestones set in condition 8 (extending only over 2 years) are potentially over- optimistic.	long overdue. Based on discussions with interviewees held at the site visit, the team considered that a two- year time frame is adequate.
3.2.2	Yes	Possibly	Yes	Overall PI score of 75 for fishery- specific decision-making processes and Condition 9 raised. (a) There are prosesses established that	At SG80 level, four scoring issues meet 80, whilst one doesn't. This leads to an overall score of 75.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
				result in measures and strategies to achieve objectives -80; (b) they are responsive to serious issues, but not to 'other important issues' (i.e. WCPFC non-response to SP albacore decline)-60; (c) the precautionary approach is used (still the exception of SP albacore)- 80; (d) information on fishery performance and management is provided, but not 'formally'-80; and (e) the approach to disputes is interactive – 100. Unclear how the 75 score was calculated. Should it not be 80? [(80+60+80+80+100)/5 = 80]. One could also argue that the SP albacore stock status is not overfished and overfishing is not occurring – hence the decline in catch rates has not yet been evaluated as important enough to trigger a definitive response – in which case 80 would be met for (b). Condition 9 (if needed) is appropriate.	In relation to the scoring on albacore, the decline in CPUE as described in the rationale has serious implications for many CCMs including French Polynesia. This scoring and the resulting condiiton was unanimously agreed between CABs involved in SP albacore fisheries. The team is therefore reluctant to amend the scoring and remove the condition.



Performance Indicator	Has all available relevant information been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible. Please attach additional pages if necessary. Note: Justification to support your answers is only required where answers given are 'No'.	CAB Response
3.2.3	Yes	Yes	NA	Overall PI score for MSC met at SG100, based on (a) MSC implemetation, (b) sanctions, (c) compliance, and (d) absence of systematic non-compliance.	No comment needed.
3.2.4	Yes	Yes	NA	Overall PI score for monitoring and evaluation of the fishery specific management system is 80, based on (a) coverage, in which key parts are covered but not all-80; and (b) internal and external review – 80 because external review is not 'regular'.	No comment needed.




Appendix 4 Stakeholder submissions

Appendix 4.1 Stakeholder comments prior to publication PCDR

Prior to the publication of the PCDR, comments were submitted by Karen Baird on behalf of Birdlife International:

Hi Karen,

This is really useful – thank you very much. We have yet to finalise the report so your timing is good. I'll make sure this gets incorporated.

Kind regards Chrissie

From: Karen Baird [mailto:K.Baird@forestandbird.org.nz] Sent: 28 September 2017 23:36 To: Chrissie Sieben <<u>chrissie.sieben@me-cert.com</u>> Cc: Charlotte Gwyther <<u>charlotte.gwyther@me-cert.com</u>> Subject: RE: 2846 (Stakeholder) Submission new info and revised timeline - MSC French Polynesia ALB & YFT

Hi there Chrissie,

While you are preparing your report I thought it might be useful to provide a bit of background around the seabird bycatch issues in this fishery so that you van include that in your PCDR. This isn't a full analysis just some ideas on where to look. I have attached FP Annual report to the WCPFC meeting this year, also a couple of papers on vulnerable seabird distribution in the region presented to SC meetings over the last couple of years.

Note very low observer coverage (3.4%) – and lack of identification of seabirds (petrels and puffins). We have concerns around potential bycatch of birds such as black petrels migrating through. Not knowing what birds are being caught (and there are a number of rare species of petrels and shearwaters in the Pacific is an issue which needs to be addressed.

Cheers Karen

Note by MEC: Attachements sent by stakeholder (available online or on request):

- EB-WP-09 NZ seabird distribution paper Rev 1 (4 August 2016)

- AR-CCM-08 FRENCH POLYNESIA PART 1

- EB-WP-09 Albatross petrel overlap hotspot bycatch 2

From: Chrissie Sieben [mailto:chrissie.sieben@me-cert.com]
Sent: Wednesday, 27 September 2017 3:12 a.m.
To: Karen Baird
Cc: Charlotte Gwyther
Subject: RE: 2846 (Stakeholder) Submission new info and revised timeline - MSC French Polynesia ALB & YFT

Dear Karen,

Thank you for your message. I can confirm you are already registered as a stakeholder for this fishery. As we exceeded the 9month deadline for publication of the PCDR, the below



notification was sent. We hope to be able to publish the PCDR before Christmas at which point you will be notified.

Kind regards Chrissie

From: Karen Baird [mailto:K.Baird@forestandbird.org.nz]
Sent: 25 September 2017 20:58
To: Chrissie Sieben <<u>chrissie.sieben@me-cert.com</u>>
Subject: RE: 2846 (Stakeholder) Submission new info and revised timeline - MSC French Polynesia ALB & YFT

Hi Chrissie,

I would like to be a stakeholder for this process on behalf of BirdLife International. I would like to comment on the draft report when it is available.

Thanks

Karen Baird Marine Advocate (F&B & BirdLife International) Royal Forest and Bird Protection Society of New Zealand Inc. Level 1 . 90 Ghuznee St . PO Box 631 . Wellington . New Zealand DD 09 422 6868 . M 021 911 068 SKYPE Karenkermadec



Appendix 4.2

Stakeholder comments following publication PCDR

Following publication of the PCDR, a stakeholder submission was received from ISSF, the International Seafood Sustainability Foundation. MSC also provided Technical Oversight (TO). These submissions, together with the team's response, are shown below.

ISSF submission



Susan Jackson ISSF President 1440 G Street NW Washington DC 20005 United States

ME Certification 56 High Street Lymington SO41 9AH United Kingdom

Washington, D.C. March 06, 2018

SUBJECT: PCDR French Polynesia albacore and yellowfin longline fishery

Dear Ms. Sieben,

The International Seafood Sustainability Foundation (ISSF) is a registered stakeholder in the MSC assessment of the French Polynesia albacore and yellowfin longline fishery. We are writing to express our concerns on the Public Comment Draft Record for the above mentioned fishery that was posted on 6th February 2018. Our concerns on Principle I scores are based on an independent report by Medley and Gascoigne (2017).

Client Action Plan

ISSF believes that the Conditions set are adequate. However, we are concerned that the Client's Action Plan contains mostly actions to be performed by the Directorate of Marine and Mining Resources of French Polynesia (DRMM), but the PCDR contains no clear commitment from DRMM itself.

ISSF is concerned that, without such a letter from DRMM, there is no clear expectation that the Client Action Plan will achieve its objectives.

International Seafood Sustainability Foundation 1440 G Street NW, Washington D.C. 20005 P: 703-226-8101 www.ISS-Foundation.org



For your reference, please consult formal letters included in PCDRs or Final Reports for other tuna fisheries that have obtained MSC certification in recent years. These are formal letters from the corresponding national fisheries agency or ministry of fisheries, in which they state their conformity and commitment to the milestones and actions described in the Client's Action Plan (see for example the <u>PCDR of the Fiji Albacore and Yellowfin Tuna Longline Fishery (Appendix 1.4, p.213)</u>, or the <u>Final Report of the re-assessment of the Pole and Line Skipjack Fishery in the Maldives (Appendix 1.3.1, p.173)</u>).

MEC response: As the registered client for this fishery assessment is the DRMM itself, the team saw no reason to require explicit agreement from them on the action plan. After all, it was the DRMM that drafted the action plan. Nevertheless, this is easily addressed and the client has provided a letter of support for the milestones and actions in the CAP. Please see Appendix 9.

Harvest Strategy – Review of alternative measures

(South Pacific albacore, WCPO-Yellowfin and EPO-Yellowfin)

1.2.1. f: This issue should have been scored in the PCDR for the three UoAs.

The Team's justification for not scoring this SI was partly based on the conclusion that discards are minimal according to observer data. However, elsewhere in the PCDR, observer coverage (less than 5%) is identified as an important data gap (e.g. 1.2.3a). This SI should be scored.

MEC response: This scoring issue only applies to unwanted catch of the P1 target species, i.e. SP albacore, WCPO yellowfin or EPO yellowfin. The three stocks are targeted specifically by this fishery. In the absence of either minimum or maximum landing sizes, it is reasonable to assume that discarding would be minimal. This was confirmed by the coordinator of the French Polynesia observer programme as explained in the rationale, as well as in other observer programmes in the region (e.g. Fiji). Furthermore, according to the DRMM highgrading is not considered to be an issue in this fishery as trips are quite short and holds are rarely completely filled. The team maintains that this issue should not be scored. Please note that this is also the approach taken by the assessment team for the Fiji albacore and yellowfin tuna longline fishery which was recertified in January 2018 (Acoura, 2018).



Harvest Control Rules (South Pacific albacore)

The report by <u>Medley and Gascoigne (2017)</u> indicates that the fishery would not meet SG60 for SI 1.2.2.a 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;
- 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.

The second of MSC's requirements for scoring an 'available' HCR is met by CMM 2014-06. In terms of the first, for SP albacore, stock biomass has not previously been reduced below the MSY level, according to the stock assessment; projections based on 2015 conditions do not predict that stock biomass will decline to the MSY level (~25%SB_{F=0}) at any time. These conditions are therefore met.

However, the biomass trajectory is consistently downwards throughout the time series, except for a brief period in the early 2000s. Under 2014 levels of effort, it is predicted to stabilise at ~35%SB_{F=0}, which is below the MSC default target level, and below an appropriate economic level for most of the fleets targeting the stock.

The case of bigeye also raises the question as to what actions WCPFC could be relied on to take, should the next stock assessment for SP albacore to 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.

1.2.2.b: (...) Not met.

1.2.2.c: (...) SG60 is met, but SG80 is not met.

Only I out of 2 SG60 were met. PI 1.2.2 score: Fail"

<u>MEC response</u>: It may be useful to consider the context of the ISSF report in a first instance. As per the ISSF website and the report itself, the purpose of the report is to:

- Provide a basis for comparing between stock scores as assessed by the same experts
- Become a useful source document for future tuna certifications or in the establishment of tuna Fishery Improvement Projects (FIPs)
- Offer a "snapshot" of the current status of the stocks, as well as the strengths and weaknesses of RFMOs
- Prioritize ISSF projects and advocacy efforts against initiatives that will improve low performance indicator scores

The report then goes on to explain that 'The scores are not a complete MSC assessment as they are not fishery-specific, i.e. they focus only on stock status (MSC Principle 1) and the



international management aspects relevant to Regional Fishery Management Organizations (RFMOs) (part of MSC Principle 3). They do not consider management in national or bilateral jurisdictions.'

Also: 'in a full assessment, much more justification would need to be provided than done here'

The outcomes of the report need to be considered in this context. There is also no formal obligation for the team to align themselves with the report or consider it, since it is in effect a pre-assessment.

A pre-assessment should be more precautionary than a full assessment, regardless of its provenance and purpose. A full assessment takes all the information available from all sources to provide the best balanced analysis possible, and the purpose is to decide, in a manner as fair and objective as possible, whether a fishery is worthy of MSC certification. A pre-assessment, conversely, takes a subset of the most easily-available information – hence conclusions are more uncertain, meaning wider confidence intervals and hence higher precaution. Furthermore, a pre-assessment may be used by fisheries to take a decision as to whether to enter MSC full assessment. As we all know, this is a costly and public process, and therefore publically-available pre-assessments have a responsibility not to suggest a fishery could pass if there is any doubt.

Following the Fourteenth Regular Session of the Commission in December 2017, the workplan for the adoption of harvest strategies under CMM 2014-06 was extended out to 2021 to allow for ongoing work towards adoption of harvest strategies for the 4 key stocks, including SP albacore, with a decision on the SP ALB target reference point scheduled for this year (2018). A commitment towards a formal harvest strategy has therefore already been made.

In relation to albacore, the MSC default level for $(S)B_{MSY}$ is only used if B_{MSY} is not directly estimated. This is not the case here; SB_{MSY} is estimated by a stock assessment which is generally acknowledged to be robust (see PI 1.2.4 as well as the conclusions of the ISSF preassessment). It is therefore appropriate for the team to score against the estimated SB_{MSY} , and projections do not predict a significant possibility of the stock biomass falling to this level.

Regarding bigeye, it is certainly true that WCPFC took a long time to respond to the bigeye issue, but realistically, decision-making in such an organisation is bound to be slow. There are now longline catch limits in place for bigeye, as well as spatial and temporal restrictions for the purse seine fishery (2016-01, 2017-01) and the reference case model in the most recent stock assessment (2017) shows some possibility of an upturn in biomass, and no evidence of recruitment impairment (although recruitment trends seem to be variable by region).



Harvest Control Rules (WCPO-Yellowfin)

The report by <u>Medley and Gascoigne (2017)</u> indicates that the fishery would not meet SG60 for SIs 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;
- 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 B_{MSY} under the current management regime.

<u>MEC response</u>: We have to score based on the requirements set out above, rather than based on speculation about what might happen in the longer term, or if the stock assessment parameters are changed (which could equally improve the perception of stock status – cf bigeye). As noted, the biomass has never been at or below B_{MSY} , and neither F nor B are at all likely to fall below this level in the next 5 years, therefore the MSC requirement is met.

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.

1.2.2.b: (...) Not met.

1.2.2.c: The tools by which CMM 2016-01 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 until 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**.

For improvement in this scoring, some demonstrable progress is required towards a formal harvest strategy (as per CMM 2014-06) such that it is clearer that management tools are likely to be effective in maintaining a stable biomass at or above reference levels.

0 out of 2 SG60 were met. PI 1.2.2 score: Fail"

MEC response: In relation to the analogy with bigeye, see response above.

In relation to SIc, the rationale should not, in fact, list the measures in place, because the argument that measures are 'available' does not require this. As long as the commitment is there to put measures in place should the stock require them (i.e. 2014-06 and associated workplans, as set out above), and as long as the stock status meets MSC requirements, as set out above, SG60 is met.



Thank you for considering our position on these issues.

Sincerely,

Susan S. Jackson President International Seafood Sustainability Foundation

International Seafood Sustainability Foundation 1440 G Street NW, Washington D.C. 20005 P: 703-226-8101 www.ISS-Foundation.org



CERTIFIED SUSTAINABLE SEAFOOD

Date: 07/03/2018 SUBJECT: MSC Technical Oversight for French Polynesia albacore and yellowfin longline fishery - Public Comment Draft Report

Dear Jo Gascoigne (ME Certification Limited (MEC))

Please find below the results of our Technical Oversight review. This was completed by both the Fisheries Standards Team and Supply Chain Standards Team.

Ref	Туре	Page	Requirement	Reference	Details	PI
27493	Guidance	139	FCR-7.10.6.1 v.2.0	A rationale shall be presented to	Pl 1.2.2: Scoring Issue a. UoA The team have made the argument	1.2.2,
				support the team's conclusion.	for WCPO yellowfin that SG60 is met due to 'available' HCRs	
					under SA2.5.3b. However, there is inclusion of information	
					relating to the PNA vessel day scheme and CMM15-01 that	
					seems to be more related to a 'generally understood' HCR. As	
					such, it appears that this additional information is unnecessary.	

Team response: This has been corrected

27494	Guidance	16	FCR_7.4.13 v.2.0	The CAB shall identify if there are	On page 16 in section 2.1.3 it states that "Considering the	
				catches of non-target (P2) stock(s) that	boundary has been set for reasons of management not biology	
				are inseparable or practically	(see Section 2.3.1) and both yellowfin stocks are inseparable	
				inseperable (IPI) from target (P1)	from each other in catches, the landings data in Table 2 are	
				stock(s)	shown by species rather than stock". However, on page 96 no IPI	
					stocks were identified in this assessment. Is this not	
					contradictory?	

Team response: The team did not consider the concept of IPI to be applicable in this case, as both yellowfin stocks are proposed for certification under Principle 1 and therefore do not meet the criteria (marked in **bold**) for IPI stocks listed below (extracted from the MSC FCR v2.0):

Inseparable or practicably inseparable catches:



7.4.13 The CAB shall identify if there are catches of non-target (P2) stock(s) that are inseparable or practicably inseparable (IPI) from target (P1) stock(s).

7.4.13.1 The CAB shall only recognise stock(s) as being an IPI stock, where the inseparability arises because either:

a. The non-target catch is practicably indistinguishable during normal fishing operations (i.e., the catch is from a stock of the same species or a closely related species); or

b. When distinguishable, it is not commercially feasible to separate due to the practical operation of the fishery that would require significant modification to existing harvesting and processing methods.

And:

c. The total combined proportion of catches from the IPI stock(s) do not exceed 15% by weight of the total combined catches of target and IPI stock(s) for the UoA;

d. The stocks are not ETP species; and

e. The stocks are not certified separately.



27495	Guidance	94	FCR-7.12.1 v.2.0	The CAB shall determine if the systems	Table 16: Under the section Potential for vessels outside of the
				of tracking and tracing in the UoA are	UoC or client group fishing the same stock it states "To avoid the
				sufficient to ensure all fish and fish	risk of vessels landing albacore or yellowfin from outside the
				products identified and sold as certified	UoC as MSC (i.e. vessels not associated with this assessment) an
				by the UoA originate from the	up to date list of vessels will be published with the certificate.
				appropriate Unit of Certification (UoC).	pending the successful outcome of this evaluation". Please
				7.12.1.1 Systems shall allow the UoA to	mention how this update will be done?
				trace any fish or fish products sold as	
				MSC-certified back to the UoC.	
				7.12.1.2 Approriate records shall be	
				maintained that demonstrate the	
				traceability of certified fish or fish	
				products back to UoC.	
				7.12.1.3 The CAB shall document the	
				risk factors outlined the in the "MSC Full	
				Assessment Reporting Template",	
				identifying anya reas of risk for the	
				integrity of certified products and how	
				they are managed or mitigated.	
				7.12.1.4 For each risk factor, there shall	
				be a description of the risk present and	
				details of the mitigation or management	
				of risk.	
				7.12.1.5 The CAB shal identify and	
				document:	
				a. The UoC,	
				b. The point of inteded change of	
				ownership of product, and	
				c. The point from which subsequent	
				Chain of Cusotdy is required.	
				7.12.1.6 Where there are IPI stocks	
				within the scope of certification, teams	



shall follow Annex PA and report on the
verification of the of the traceability
systems including:
7.12.1.6a An evaluation of the species,
stock, proportion and weight of the
catch of IPI stock(s) and their eligibility
to enter further certified chains of
custody, as per Annex PA.

Team response: Pending the successful outcome of this evaluation, a certificate will be published which includes the schedule of vessels. The client will be instructed to notify MEC should there be a change in the vessels listed. If this happens, an amended certificate will be published. Please note that this is already common practice for a number of fisheries certified by MEC and other CABs (e.g. for the SZLC, CSFC & FZLC Cook Islands EEZ South Pacific albacore & yellowfin longline fishery).



27497	Minor	94	FCR-7.12.1 v.2.0	The CAB shall determine if the systems	In table 16, it is mentioned that species are segregated in the
				of tracking and tracing in the UoA are	hold. Could you describe the method for this segregation?
				sufficient to ensure all fish and fish	
				products identified and sold as certified	
				by the UoA originate from the	
				appropriate Unit of Certification (UoC).	
				7.12.1.1 Systems shall allow the UoA to	
				trace any fish or fish products sold as	
				MSC-certified back to the UoC.	
				7.12.1.2 Approriate records shall be	
				maintained that demonstrate the	
				traceability of certified fish or fish	
				products back to UoC.	
				7.12.1.3 The CAB shall document the	
				risk factors outlined the in the "MSC Full	
				Assessment Reporting Template",	
				identifying anya reas of risk for the	
				integrity of certified products and how	
				they are managed or mitigated.	
				7.12.1.4 For each risk factor, there shall	
				be a description of the risk present and	
				details of the mitigation or management	
				of risk.	
				7.12.1.5 The CAB shal identify and	
				document:	
				a. The UoC,	
				b. The point of inteded change of	
				ownership of product, and	
				c. The point from which subsequent	
				Chain of Cusotdy is required.	
				7.12.1.6 Where there are IPI stocks	
				within the scope of certification, teams	
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		shall follow Annex PA and report on the	
		verification of the of the traceability	
		systems including:	
		7.12.1.6a An evaluation of the species,	
		stock, proportion and weight of the	
		catch of IPI stock(s) and their eligibility	
	1	to enter further certified chains of	
		custody, as per Annex PA.	

Team response: On the freezer vessels, after processing each loin will get a label with the name of the species, the vessel registration number and the trip number. Only albacore is separated from other loins in a specific compartment; however the other loins remain identifiable with their label. This has been made cleared in the report.

	1			11 1		(
27499	Guidance	160	FCR-7.10.6.1 v.2.0	A rationale shall be presented to	Pl 2.1.1. scoring issue a EPO Bigeye: It is currently unclear what	2.1.1,
				support the team's conclusion.	clause under SA3.4.6 is used to determine there is a	
					demonstrably effective strategy in place.	

MEC response: the rationale states the following: '*In relation to EPO bigeye, this fishery overlaps with the NE tropical Pacific purse seine yellowfin and skipjack fishery; this fishery seemingly catches no bigeye, however (see Tables 10 and 12 in SCS, 2017).*' For clarification, the team has added the following: 'Catches of bigeye were less than 800 tonnes in 2014 and 2015 for both WCPO and EPO bigeye combined. Assuming this corresponds to 100% EPO bigeye (which is unlikely), this still makes up only 2% of the total longline catches of bigeye tuna in the eastern Pacific Ocean (estimated at 39,933 tonnes for 2015). In accordance with Clause d of the below requirements, SG80 is met.

Extract from FCR v2.0: SA3.4.6: At the SG80 level, where a species is below the level at which recruitment could be impaired, the team shall recognise "evidence of recovery" or a "demonstrably effective strategy" as being in place such that all MSC UoAs do not collectively hinder recovery of the species using any or a combination of the following as rationale:

a. Direct evidence from time series estimates of stock status.

- b. Indirect evidence from time series of indicators or proxies of stock status indicative of the state of the whole stock.
- c. Indicators, proxies or absolute estimates of exploitation rate that show that fishing mortality experienced by the stock is lower than FMSY.
- d. Direct evidence that the proportion of combined catch by all MSC UoAs relative to the total catch of the stock does not hinder recovery.



This report is provided for action by the CAB and ASI in order to improve consistency with the MSC scheme requirements; MSC does not review all work products submitted by Conformity Assessment Bodies and this review should not be considered a checking service. If any clarification is required, please contact the relevant FAM or SCS manager for more information.

Marine Stewardship Council cc: Accreditation Services International



Appendix 5 Surveillance Frequency

The surveillance level for this fishery is set at the default level (Level 6), requiring 4 annual on-site audits.

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 6 Objections Process

No objections were raised.



Appendix 7 Client Action Plan

French Polynesia will debrief the MSC client action plan with the stakeholders, so they can better understand what the conditions to be certified are, what we have to do both at the local and regional level to address these conditions in due time. It will be the first step to introduce the management plan of the fisheries to them.

Condition 1: PI 1.2.1a (HS SPA)

(Condition 1) South Pacific albacore needs a harvest strategy that is responsive to the state of the stock, with and the elements of the harvest strategy (monitoring, stock assessment, harvest control rules and management actions) working together to achieve stock management objectives.

(PI 1.2.1a) To ensure that the **harvest strategy** for South Pacific albacore is **responsive to the state of the stock** and the elements of the harvest strategy **work together** towards achieving stock management objectives reflected in P1.1.1 SG 80*, the client (French Polynesia) will:

<u>Year 1 (2018)</u>

- 1. Undertake activities to ensure appropriate focus is given to albacore tuna management at SC 14, TCC 14 and the fifteenth Session of the Commission (December 2018) and participate actively in all the WCPFC discussions.
- 2. Contribute to the implementation of the roadmap as adopted by WCPC14 and push the Commission to get the TRP agreed.
- 3. Participation and statements at SC14 to make sure SC 14 provides advice on candidate HCR options.
- 4. Encourage the industry to participate in any industry groups in support of a harvest strategy for SPA as applicable.

Year 2 (2019)

- 1. Undertake activities to ensure appropriate focus is given to albacore tuna management at SC 15, TCC 15 and the sixteenth Session of the Commission (December 2019) and participate actively in all the WCPFC discussions.
- 2. Urge the Commission (through statements) to have the performance of candidate HCR evaluated, based on agreed TRP.
- 3. Encourage the industry to participate in any industry groups in support of a harvest strategy for SPA as applicable.

<u>Year 3 (2020)</u>

- 1. Undertake activities to ensure appropriate focus is given to albacore tuna management at SC 16, TCC 16 and the seventeenth Session of the Commission (December 2020) and participate actively in all the WCPFC discussions.
- 2. Urge the Commission (SC and plenary), through statements to give further advice on candidate HCRs and make sure the Commission considers candidate HCRs.
- 3. Encourage the industry to participate in any industry groups in support of a harvest strategy for SPA as applicable.



Year 4 (2021)

- 1. Undertake activities to ensure appropriate focus is given to albacore tuna management at SC 17, TCC 17 and the eighteenth Session of the Commission (December 2021) and participate actively in all the WCPFC discussions.
- 2. Urge the Commission (through statements) to have the HCR agreed and the harvest strategy in place.
- 3. Encourage the industry to participate in any industry groups in support of a harvest strategy for SPA as applicable.

Note :

French Polynesia has already started the process, with those activities carried out in 2017, such as:

- 1. Actively participated in the Meeting on october 4th, right after TCC13, in Pohnpei, to Progress the Draft Bridging CMM for South Pacific Albacore.
- 2. At SC13, French Polynesia did her best to make sure SC 13 advice is consistent with the time frame scheduled in the work plan announced in CMM 2014-06, in other words to make sure the harvest strategy building is not further deferred. French Polynesia did her best especially to make sure SC13 recommends that the advice from SC11 (longline fishing mortality and longline catch be reduced to avoid further decline in the vulnerable biomass so that economically viable catch rates can be maintained, especially for longline catches of adult albacore) is taken into consideration when the TRP for SPALB is discussed at WCPFC 14.
- 3. Undertaken activities and made a statement to ensure appropriate focus is given to albacore tuna management (harvest strategy) at the fourteenth Session of the Commission (December 2017)
- 4. Encouraged WCPFC, through submission of a position statement at WCPFC 14, to adopt an explicit TRP for SPALB.

* P 1.1.1 SG80: the stock is at a level which maintains high productivity and has a low probability of recruitment overfishing; it is **highly likely** that the stock is above the PRI.

Condition 2: PI 1.2.2a (HCR SPALB)

(Condition 2): South Pacific albacore needs a harvest control rule that ensures that the exploitation rate is reduced as the PRI is approached and is expected to keep the stock fluctuating around the target level and robust to the main uncertainties. The tools used to implement the HCR should be effective in achieving the required exploitation levels.

(PI 1.2.2a). 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.

(PI 1.2.2b). The HCRs are likely to be robust to the main uncertainties.

(PI 1.2.2c). Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs

This client action plan (condition 2) is closely linked to the previous one (for condition1) and some actions proposed previously won't be repeated below but they also apply to this section.



To support the development of appropriate HCR for SPALB, the respective years the client will:

- 1. Provide any requested practical support and data for SPC and WCPFC analyses of HCR consistent with candidate reference points.
- 2. Engagement to promote the completion and adoption of HCR for SPALB
- 3. Consult and coordinate with other delegations to WCPFC, in advance of the Commission to seek their support for the adoption of appropriate HCR by the WCPFC
- 4. Encourage WCPFC, through client submission of a position statement to WCPFC, to adopt an appropriate HCR for SPALB, with explicit pre-agreed actions to be taken to reduce the exploitation rate if the stock approaches or falls below reference points.
- 5. Ensure the WCPFC workplan is effectively implemented.

Condition 3: PI 1.2.1a (HS WCPO YFT)

(Condition 3) WCPO YFT needs a harvest strategy that is responsive to the state of the stock, with and the elements of the harvest strategy (monitoring, stock assessment, harvest control rules and management actions) working together to achieve stock management objectives. (PI 1.2.1a) To ensure that the **harvest strategy** for WCPO YFT is **responsive to the state of the stock** and the elements of the harvest strategy **work together** towards achieving stock management objectives reflected in P1.1.1 SG 80*, the client (French Polynesia) will:

Undertake the same general actions as for SPALB, such as:

- 1. Undertake activities to ensure appropriate focus is given each year to yellowfin tuna management at SC, TCC and the Commission meetings and participate actively in all the WCPFC discussions about yellowfin management.
- 2. Provide any requested practical support and data for SPC and WCPFC analyses of HCR consistent with candidate reference points.
- 3. Engagement to promote the completion and adoption of HCR for yellowfin tuna.
- 4. Consult, encourage and coordinate with other delegations to WCPFC to support the adoption by WCPFC of HCR consistent with MSC SG 80 standards.
- 5. Encourage WCPFC, through client submission of a position statement to WCPFC, to adopt an appropriate HCR for yellowfin, with explicit pre-agreed actions to be taken to reduce the exploitation rate if the stock approaches or falls below reference points.
- 6. Ensure the WCPFC workplan is effectively implemented.

Year 1 (2018):

- 1. Urge WCPFC 15 to agree on interim performance indicators for the harvest strategy, make a statement and search collaboration of other CCMs to support this purpose
- 2. Encourage the industry to participate in any industry groups in support of a harvest strategy for YFT as applicable.



Year 2 (2019):

- 1. Urge WCPFC 16 to agree on a TRP, make a statement and search collaboration of other CCMs to support this purpose
- 2. Encourage the industry to participate in any industry groups in support of a harvest strategy for YFT as applicable.

Year 3 (2020)

- 1. Urge WCPFC 17 to agree on final performance indicators for evaluating HCRs, make a statement and search collaboration of other CCMs to support this purpose.
- 2. Encourage the industry to participate in any industry groups in support of a harvest strategy for YFT as applicable.

Year 4 (2021)

- 1. Urge WCPFC 18 to agree on HCRs and have harvest strategy in place for YFT, make a statement and search collaboration of other CCMs to support this purpose.
- 2. Encourage the industry to participate in any industry groups in support of a harvest strategy for YFT as applicable.

* P 1.1.1 SG80: the stock is at a level which maintains high productivity and has a low probability of recruitment overfishing; it is **highly likely** that the stock is above the PRI.

Condition 4: PI 1.2.2 (HCR WCPO YFT)

(Condition 4): WCPO YFT needs a harvest control rule that ensures that the exploitation rate is reduced as the PRI is approached and is expected to keep the stock fluctuating around the target level and robust to the main uncertainties. The tools used to implement the HCR should be effective in achieving the required exploitation levels.

PI 1.2.2a. 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.

PI 1.2.2b. The HCRs are likely to be robust to the main uncertainties.

PI 1.2.2c. Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs

This client action plan for condition 4 is closely linked to the previous one (for condition 3) and some actions proposed previously won't be repeated below but they also apply to this section.

- 1. Undertake activities to ensure appropriate focus is given to yellowfin tuna management at SC, TCC and the Commission meetings and participate actively in all the WCPFC discussions about yellowfin management.
- 2. Provide any requested practical support and data for SPC and WCPFC analyses of HCR consistent with candidate reference points.
- 3. Engagement to promote the completion and adoption of HCR for yellowfin tuna



- 4. Consult, encourage and coordinate with other delegations to WCPFC to support the adoption by WCPFC of HCR consistent with MSC SG 80 standards.
- 5. Encourage WCPFC, through client submission of a position statement to WCPFC, to adopt an appropriate HCR for yellowfin, with explicit pre-agreed actions to be taken to reduce the exploitation rate if the stock approaches or falls below reference points.

Condition 5: PI 2.3.1b (ETP species- seabirds and turtles)

(Condition 5) The evidence base for determining interaction rates with ETP species, in particular seabirds and turtles, should be improved so that trends in interactions can be measured over time and so that it can be determined whether the UoA may be a threat to protection and recovery of the ETP species. Should a potential threat be identified, the fishery should demonstrate that the current ETP management strategy in place is adequate to ensure direct effects of the UoA are highly likely to not hinder recovery of ETP species. (PI 2.3.1b) The UoA meets national and international requirements for the protection of ETP species. The UoA does not hinder recovery of ETP species.

To ensure that the UoA meets national and international requirements for the protection of ETP species and that direct effects of the UoA are highly likely to not hinder recovery of ETP species, the client will:

Year 1 to 4: From year 1 onwards, French Polynesia will rely on a combination of self-reporting and increased observer coverage.

- For observer coverage issues, French Polynesia will make sure the observer coverage rate reaches a minimum of 5%. Solve the administrative and budget problems that prevent the observer program being truly effective.
- For identification problems with birds, we will improve the quality of the data the following way :

Year 1:

- 1. Improve regional logsheets by including a box for "birds interactions" and "turtles interactions", so the captain can mention those interactions when they occur and the DRMM can start inputting the data in Tufman.
- 2. E-reporting will start being implemented: at least 20 vessels will be equipped with tablets. E-reporting will help customize the regional logsheets for country-specific data collection requests, such as interactions with ETP species.
- 3. Have a training by Manu for observers (and maybe captains and crew) on seabird identification (species present in French Polynesia and migratory seabirds that are transiting the area of French Polynesia) and on proper data collection (the way to take proper pictures to indentify a bird etc). The pictures will be sent to seabirds experts either in real time or after trip completion. As Manu is already part of a bird expert network, pictures will be sent to Manu first, and Manu will be in charge of forwarding them to the appropriate experts, for expert identification.
- 4. The "white paper", concerning the fishery development strategy for the next 10 years, will be submitted to the French Polynesia's Assembly. It contains an item (item #1) that



consists of "improving the data collection on the fishery and improve the scientific knowledge through a shared expertise". This action being sealed in this strategic document, it helps to secure its implementation on the long term. This action deals inter alia with keeping a minimum of 5 % observer coverage.

Year 2:

- 1. DRMM keeps on inputting in Tufman the self reporting data on interactions with birds and turtles from the logsheets and measure the level of interaction. Compare it to the level of interaction from observer logbooks.
- 2. If the first wide E-reporting test of year 1 is successful, E-reporting will be further spread to 20 more vessels. E-reporting will help customize the regional logsheets for country-specific data collection requests, such as interactions with ETP species.
- 5. Have a training by Manu for observers, captains and crew on seabird identification (species present in French Polynesia and migratory seabirds that are transiting the area of French Polynesia) and on proper data collection (the way to take proper pictures to indentify a bird etc). The pictures will be sent to seabirds experts either in real time or after trip completion. As Manu is already part of a bird expert network, pictures will be sent to Manu first, and Manu will be in charge of forwarding them to the appropriate experts, for expert identification.
- 3. Implement a project with the observer program and Manu to make a seabird identification guide book for observers and fishermen (captains and crew), based on the actual French Polynesia's seabird atlas
- 4. Work with SPC to develop more details on the observer guidebook regarding bird identification (optional, because the guide book is regional)
- 5. Implementation of the adopted "white paper". The item above-mentioned (#1) is implemented, starting by building a roadmap to comply with the 5 % observer coverage objective including solving on the long term the administrative and budget matters.
- 6. Build a management measure concerning the interactions with ETP species, in the framework of the "EEZ-wide AMG", including for example trigger points or additional mitigation measures if needed.

Year 3:

- 1. DRMM keeps on inputting in Tufman the self reporting data on interactions with birds and turtles from the logsheets and measure the level of interaction. Compare it to the level of interaction from observer logbooks. Both logsheet and logbooks data can now start being compared with year one.
- 2. If the two first wide E-reporting tests are successful, E-reporting will be further spread to 20 more vessels. E-reporting will help customize the regional logsheets for country specific data collection request, such as interactions with ETP species.
- 3. Have a training by Manu for observers, captains and crew on seabird identification (species present in French Polynesia and migratory seabirds that are transiting the



area of French Polynesia) and on proper data collection (the way to take proper pictures to indentify a bird etc). The pictures will be sent to seabirds experts either in real time or after trip completion. As Manu is already part of a bird expert network, pictures will be sent to Manu first, and Manu will be in charge of forwarding them to the appropriate experts, for expert identification.

- 4. Manu will train the observer program so that for the following years, the program can train the captains and crew alone in seabird identification. Manu will also monitor the identification made by the observers, captains and crew to judge the level of confidence within the identification of these species, in order to improve it.
- 5. Finalize the project with the observer program and Manu to make a seabird identification guide book for observers and fishermen (captains and crew) and circulate it.
- 6. If the data are already available and strong enough, start analyzing the data collected since year 1, aiming at describing and measuring the impact of longline on seabirds in French Polynesia.
- 7. Implementation of the adopted "white paper". The item above-mentioned is implemented (#1), the roadmap to comply with the 5 % observer coverage objective is being implemented.
- 8. Implement the new management measure concerning the interactions with ETP species, in the framework of the "EEZ-wide AMG".

Year 4:

- 1. DRMM keeps on inputting in Tufman the self reporting data on interactions with birds and turtles from the logsheets and measure the level of interaction. Compare it to the level of interaction from observer logbooks. Both logsheet and logbooks data are compared with the previous years. We can eventually start seeing any trends in interactions.
- 2. Once a year from year 4 onwards, the DRMM/observer program will provide training to fishermen and observers on seabird identification for both migratory species transiting the area and French Polynesia' species at least on an annual basis. The DRMM/observer program will also keep circulating the identification guidebook throughout the years and monitor the identifications made to make sure they are reliable. When needed, Manu will provide help for training, identification, monitoring and networking with seabird experts.
- 3. Analyze the bird interaction data collected since year 1, aiming at describing and measuring the impact of longline on seabirds in French Polynesia.
- 4. Implement the management measure concerning the interactions with ETP species, in the framework of the "EEZ-wide AMG" and assessment of its effectiveness. Readjustment if necessary to ensure ETP management strategy is adequate to ensure direct effects of the UoA are highly likely to not hinder the recovery of ETP species.



Consultation on condition:

Association on Birds (Manu) to provide training to fishermen and observers on bird identification, monitor it and participate in a project to make a seabird identification guidebook for species present in French Polynesia, intended for fishermen and observers.

Condition 6:

(Condition 6) The client should provide evidence that all relevant national and regional regulations on fishery interactions with ETP species are adhered to by the UoA so that it can be demonstrated that the fishery does not hinder recovery of ETP species. (PI 2.3.2d) Management strategy implementation

To ensure that all relevant national and regional regulations on fishery interactions with ETP species are adhered to by the UoA so that it can be demonstrated that the fishery does not hinder recovery of ETP species, the client will:

Year 1 to 3: From year 1 onwards, make sure the observer coverage rate reaches a minimum of 5%. Solve the administrative and budget problems that prevent the observer program being truly effective.

Year 2 to 3: once a year, from year 2 onwards, provide the training mentioned below (*).

Year 1 (2018):

- The "white paper", concerning the fishery development strategy for the next 10 years, will be submitted to the French Polynesia assembly. It contains an item (#2) that consists of "adopting management measures that aim at maintaining the catch rates of the French Polynesia longline fleet and ensuring conformity with international CMMs". This action being sealed in this strategic document, it helps to secure its implementation on the long term.
- 2. The DRMM will make an inventory of all the applicable WCPFC CMMs, and especially the ones that have yet to be incorporated in the French Polynesia regulations, identify the shortcomings at DRMM to ensure compliance with these CMMs.
- 3. The DRMM will also identify the shortcomings at fleet level in the implementation of relevant national and regional regulations in relation to ETP species.
- 4. The DRMM will inform the fishermen and other stakeholders about the need to incorporate these CMM in new local rules and explain what they consist of (for example : obligation to have on board and use line cutters, de –hookers)

Year 2 (2019):

- 1. Implementation of the adopted "white paper". The item above-mentioned (#2) is then implemented. This means the management plan is built, making sure all the applicable WCPFC CMM are translated into French Polynesia regulations. The management plan and white paper are submitted to the French Polynesia Assembly for enforcement (see CAP for condition 8 for more details on those 2 documents).
- 2. Make sure fishermen and other stakeholders implement the new measures :



- a. help them to get the necessary equipment on board,
- b. have information sessions/trainings on good practices for handling ETP species and applicable regulations by the DRMM/observer program*
- c. seek support from SPC to provide documentation on a regular basis (posters, flyers on good practices etc), secure budget at DRMM for a regular provision of documentation, from year 2 onwards.

Year 3 (2020):

- 1. (from year 3 onwards) Controls on boards by DRMM and through the observer program to make sure fishermen implement the applicable rules, have and use the necessary equipment; report on the offenses and sanctions if some are not compliant.
- 2. If level of non compliance is high, keep on doing actions 2a, 2b, 2c from year 2

NB : For the bird identification issue, please consider the same CAP as for Condition 5.

Condition 7:

(Condition 7) The evidence base for determining interaction rates with ETP species, in particular seabirds and turtles, should be improved so that trends in interactions can be measured over time and so that it can be determined whether the UoA may be a threat to protection and recovery of the ETP species. Should a potential threat be identified, the fishery should demonstrate that the current ETP management strategy in place is adequate to ensure direct effects of the UoA are highly likely to not hinder recovery of ETP species.

(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.

To ensure that the UoA meets national and international requirements for the protection of ETP species and that direct effects of the UoA are highly likely to not hinder recovery of ETP species, the client will:

Please refer to the CAP for condition 5. It is the same CAP.

Condition 8: PI 3.2.1 (SPALB and YFT)

(Condition 8): The client should ensure that **short and long-term objectives**, consistent with the outcomes expressed by MSC's Principles 1 and 2, are **explicit** within the French Polynesia management system. This may be done via the promulgation of a codified national fishery management plan, as proposed during the site visit, or by any other suitable means. The objectives should be responsive to amendments as needed to accommodate WCPFC CMMs, and take account of the general provisions of the Honolulu Convention (2000).

(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.

To ensure that short and long-term objectives, consistent with the outcomes expressed by MSC's Principles 1 and 2, are explicit within the French Polynesia management system and to ensure that the objectives are responsive to amendments as needed to accommodate



WCPFC CMMs, and take account of the general provisions of the Honolulu Convention (2000), the client will:

Year 1 (2018):

- Consult all the affected stakeholders and other partners on the "fishery development white paper" (Schéma Directeur de Développement de la Pêche Hauturière). A study was carried out to draft this white paper. The results of the study have been presented to the stakeholders on September 2017 and the report has been available to them, so that all the stakeholders can have the same information in order to build the public policy (the white paper) in partnership with the Ministry/DRMM.
- 2. This building will consist in agreeing all together on explicit short and long term objectives, on the action plan (prioritizing actions and defining the role of each stakeholder) and on the timeline to implement this plan. The objectives should be responsive to amendments as needed to accommodate WCPFC CMMs and take into account the general provisions of the Honolulu Convention.
- 3. Within the DRMM, finalize the work on the draft management plan for the longline fishery, translating explicitly WCPFC CMMs and adding all the necessary items to meet MSC SG 80 requirements in the fields which fall within French Polynesia's authority. The provisions of this management plan should be responsive to amendments as needed to accommodate WCPFC CMMs and take into account the general provisions of the Honolulu Convention. Drafting this management plan, French Polynesia will consider maintaining viable catch rates for its fleet targeting SPALB.
- 4. If needed, work with France to address the issues which fall within France's jurisdiction regarding French Polynesia longline fishery.
- 5. Consult stakeholders on the draft management plan to make sure they understand the need for it, its objectives, the WCPFC and MSC SG 80 requirements. These consultations will also allow DRMM to have the stakeholders' feedback, in order to improve the draft, so that it can be accepted by all parties.
- 6. Submit the "white paper" to the Assembly for promulgation and therefore enforcement.

Year 2 (2019):

- 1. Submit the management plan for the longline fishery to the Assembly for promulgation and therefore enforcement.
- 2. Implement the "White paper"'s and the management plan's provisions.

Condition 9: PI 3.2.2 (SPALB catch rates): decision-making process

At the Commission level, decision-making processes should respond to important issues, and specifically to the declining catch rates of South Pacific albacore, in a transparent, timely and adaptive manner. This could be done by implementing a formal harvest strategy, as set out in CMM 2014-06 and in Condition 1, or by some other means if appropriate.

3.2.2b. 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.



At the Commission level, in order to make the 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, the client will undertake the same actions as per condition 1 on SPALB HS.

The client will also undertake activities to ensure appropriate focus is given to economic viability of catch rates at the commission level.

Note that:

French Polynesia asked SPC for a bio-economic analysis of the French Polynesian longline fishery very early in the process on considering economic issues in fisheries at the regional level (2012), which shows French Polynesia is concerned about addressing not only biological issues in the fisheries management, but also economic viability.

French Polynesia wants viable catch rates as one of her objectives for her domestic fleet on SPALB. To respond to that objective, the first step is to know where we are.

In 2017, French Polynesia did her best especially to make sure SC13 recommends that the advice from SC11 (longline fishing mortality and longline catch be reduced to avoid further decline in the vulnerable biomass so that economically viable catch rates can be maintained, especially for longline catches of adult albacore) is taken into consideration when the TRP for SPALB is discussed at WCPFC 14.



Appendix 8 Letter of support Manu



Société d'Ornithologie de Polynésie



Partnership for nature and people

Le Vice-président

à

Marie SOEHNLEN Chargée de projets pêche hauturière Direction des ressources marines et minières

Objet : collaboration avec la DRM sur les prises accessoires d'oiseaux

Madame,

Comme suite à nos échanges oraux et par messages électroniques je vous confirme que la Société d'Ornithologie de Polynésie '*Manu*', dont le but est la protection des oiseaux sauvages de Polynésie dans leurs milieux naturels, accepte le principe d'assister la DRM dans ses actions de la DRMM sur les prises accessoires d'oiseaux de mer, dans le cadre du projet d'écolabellisation de la pêche palangrière polynésienne.

Nous pourrions ainsi dispenser des formations pour les observateurs, voire les marins et capitaines, à l'identification des oiseaux marins de Polynésie française et à la collecte de données relatives à ces oiseaux (prises de photos adaptées, prélèvements, etc).

La mise en place de ces formations pourrait, en partenariat avec le programme observateur, permettre de réaliser et diffuser un guide de reconnaissance des oiseaux marins à l'attention des observateurs et équipages (à partir de l'atlas des oiseaux marins de Polynésie française déjà existant).

Nous souhaiterions être associé à l'analyse les données collectées dans ce cadre pour tenter de qualifier et quantifier l'impact de la pêche palangrière sur les oiseaux marins en Polynésie française.

Je reste à votre disposition pour tout renseignement complémentaire et la mise en place de ces actions qui devrons faire l'objet d'une convention entre '*Manu'* et la DRM.

Je vous prie d'agréer, Madame, l'expression de mes hommages.

Philippe Raust

Société d'Ornithologie de Polynésie "MANU" – B.P.7023, 98719 Taravao, Tahiti, Polynésie française Numéro TAHITI : 236778 - Tél./Fax : 40 52 11 00 - Email : sop@manu.pf - Site internet : www.manu.pf



Appendix 9 Letter of support DRMM



MINISTERE DU DEVELOPPEMENT DES RESSOURCES PRIMAIRES, DES AFFAIRES FONCIERES, DE LA VALORISATION DU DOMAINE ET DES MINES POLYNESIE FRANÇAISE

1484 / MPF / DRMM

Papeete, le 2 0 MARS 2018

DIRECTION DES RESSOURCES MARINES ET MINIERES

Le Directeur

<u>Affaire suivie par</u> : CIV- M.Soehnlen

à

Mme Alba DEL RIO POZA, ME CERTIFICATION LIMITED 56, High Street, Lymington Hampshire, S0419AH United Kingdom

Objet : Commitment to the milestones and actions described in the client's action plan **Réf.** : ISSF's comments on French Polynesia's PCDR

Dear Madam,

I hereby confirm that the French Polynesia's Marine Resources and Mining department is fully committed to ensure that the actions mentioned in the Client Action Plan for the French Polynesia's albacore and yellowfin longline fishery are implemented and progressed over the next five years, by working closely with the fishing industry and other stakeholders.

Yours faithfully,

Pour le Ministre et par délégation édric PONSONNET TAH

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