PNG Fishing Industry Association's purse seine skipjack, yellowfin, and bigeye tuna fishery

Year 2 Surveillance Report

MSC-F-31470

Conformity Assessment Body (CAB)	SCS Global Services
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Fishery client	Fishing Industry Association (FIA) PNG
Assessment type	*Second Surveillance*
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Glossary

aFAD	Anchored Fish Aggregating Device
AW	Archipelagic Waters
CMMs	Conservation and Management Measures
dFAD	Drifting Fish Aggregating Device
EEZ	Exclusive Economic Zone
ETP	Endangered, Threatened or Protected Species
FAD	Fish Aggregating Device
FAO	Food and Agriculture Organization of the United Nations
FCP	Fisheries Certification Process
FFA	Forum Fisheries Agency
iFIMS	Fisheries Information Management System
Kg	Kilogram
LBFV	Locally Based Foreign Fishing Vessels
MP	Management Plan
MSC	Marine Stewardship Council
MSE	Management Strategy Evaluation
NFA	National Fisheries Authority (PNG)
nm	Nautical mile
OFL	Over-Fishing Level
PAE	Party Allowable Effort
PH	Philippines
PI	Performance Indicator
PNA	Parties to the Nauru Agreement
PNG	Papua New Guinea
PNG FIA/FIA PNG	PNG Fishing Industry Association
PS VDS	The Purse Seine Vessel Day Scheme
ROP	Regional Observer Programme
SCS	SCS Global Services
SI	Scoring Issue
SPC	Secretariat of the Pacific Community
t and mt	Metric ton
TAC	Total Allowable Catch
UoA	Unit of Assessment
UoC	Unit of Certification
VDS	Vessel Day Scheme
VME	Vulnerable Marine Ecosystem
VMS	Vessel Monitoring System
WCPFC	Western and Central Pacific Fisheries Commission
WCPO	Western and Central Pacific Ocean
WWF	World Wildlife Fund

1 Executive Summary & Conclusion

This report summarizes the findings from the 2023 second surveillance audit of the PNG Fishing Industry Association's purse seine skipjack, yellowfin, and bigeye tuna fishery. The fishery was first certified to the MSC requirements in 2020 (skipjack and yellowfin only) using the default assessment tree (MSC Fisheries Standard and Guidance v2.01). Subsequent scope extensions have added UoCs for bigeye and PNA waters. Following the MSC guidelines for implementation timeframes, the team conducted a surveillance audit in accordance with the new process requirements in the MSC Fisheries Certification Process (FCP) v2.3.

The 2023 second annual surveillance audit was held on-site in Port Moresby, Papua New Guinea and focused on any changes since the first annual surveillance audit (2022) and scope extensions, as well as monitoring continued compliance with the MSC Principles and Criteria. The fishery originally received 14 conditions in the 2019 full assessment, and an additional 2 conditions in the bigeye scope extension, and 4 new conditions in the PNA scope extension.

Progress on Principle 1:

The MSC Fisheries Standard version 3.0, published on October 2022, sets new requirements for harvest control rules (PI 1.2.1 SI a and SI b) and harvest strategies (PI 1.2.2 all scoring issues) for RFMO-managed fisheries (MSC Fisheries Standard v3. SE1.1.1). Tool D, contained in the MSC Fisheries Standard Toolbox v1.1, permits fisheries that are currently certified or under assessment to undertake the early application of Section SE, contingent upon the majority (>50%) of UoCs of certified fisheries targeting the stock agreeing to apply Section SE (MSC Toolbox v1.1 D1.1.1). Under the early application of Section SE, the CABs of overlapping UoAs will collaborate to conduct a one-off meeting and produce a joint single assessment report for each target stock. The majority of overlapping UoCs agreed to the early application of Section SE for the following four stocks: (1) Western Central Pacific Ocean (WCPO) yellowfin tuna (*Thunnus albacares*), (2) WCPO skipjack tuna (Katsuwonus pelamis), (3) WCPO bigeye tuna (*T. obesus*) and (4) South Pacific albacore tuna (*T. alalunga*). The UoAs/UoCs for the fishery in this report which includes any of the aforementioned target stocks are included in the early application of Section SE. For a complete list of all UoAs/UoCs included, please refer to the 'MSC Section SE Announcement' webpage for this fishery on the MSC database published on April 13th, 2023. The announcement was uploaded to the MSC database for publication at least 30 days before the one-off meeting was held. As outlined in the 'MSC Section SE Announcement,' stakeholders were invited to attend the information collection part of the one-off meeting, and the assessment teams met with stakeholders. Stakeholder input was limited to PI 1.2.1 scoring issues a and b and PI 1.2.2. Only stakeholders that participated in the one-off meeting or that submitted written information to the teams on Section SE Public Comment Draft Report are eligible to object to the Section SE Final Report findings (when available) via the MSC Disputes Process (MSC Toolbox v1.1 D1.2.7).

Progress on Principle 2: The fishery had a total of seven open conditions under Principle 2 during the 2023 second annual surveillance audit related to ETP and Habitat. Given these findings, condition 2-3 (PI

2.3.3.a for Cetaceans) was closed. Furthermore, with new information outlined in section 3.2 (Re-scoring Performance Indicators) and evidence of a decrease in FAD sets by the UoA, the assessment team went on to close condition 2-4 (PI 2.4.1). The remaining five open conditions (2-2 [PI 2.3.2.d for Whale sharks and cetaceans], 2-5 [PI 2.4.2], 2-6 [PI 2.4.3.b], 2-7 [2.3.2.c], 2-8 [2.3.2.d]) are on target.

Progress on Principle 3:

The fishery had a total of five open conditions under Principle 3 during the 2023 second annual surveillance audit. Three conditions applied to the PNG component of the UoA and two to the Philippines UoA. An on-target finding was made for four conditions: 3-1, 3-3, 3-4 and 3-5. Condition 3-2 (PNG) was found to be behind target. This condition relates to SI 3.2.1, following the site visit, two additional conditions (3-6 and 3-7) are opened for the PNG component of the UoA. These relate to MCS implantation (SI 3.2.3(a)) and Sanctions (SI 3.2.3(b)). The fishery now has seven open conditions, one of which is behind target.

It is SCS's view that the PNG Fishing Industry Association's purse seine skipjack, yellowfin, and bigeye tuna fishery continues to meet the standards of the MSC and complies with the 'Requirements for Continued Certification.' SCS recommends the continued use of the MSC certificate through the end of the certificate cycle when conditions are expected to close.

2 Report details

2.1 Surveillance Information

Table 1 . Summary of Surveillance Information

<table>
<tr><td>1</td><td colspan="2">Fishery name</td></tr>
<tr><td></td><td colspan="2">PNG Fishing Industry Association’s purse seine skipjack, yellowfin, and bigeye tuna fishery</td></tr>
<tr><td>2</td><td colspan="2">Unit(s) of Assessment (UoA)</td></tr>
<tr><td></td><td colspan="2">
<table>
<tr><th>UoA 1, 2, 3, 4, 5 and 6</th><th>Description</th></tr>
<tr><td>Species and stock</td><td>UoA 1 and 4: Western Pacific Skipjack tuna
UoA 2 and 5: Western Pacific Yellowfin tuna
UoA 3 and 6: Western Pacific Bigeye tuna</td></tr>
<tr><td>Fishing gear type(s) and, if relevant, vessel type(s)</td><td>UoA 1-3: Purse seine gear, all set types, flagged to Papua New Guinea
UoA 4-6: Purse seine gear, all set types, flagged to Philippines</td></tr>
<tr><td>Client group</td><td>UoA 1-6: Fishing Industry Association of Papua New Guinea</td></tr>
<tr><td>Other eligible fishers</td><td>Other purse seine vessels flagged to Papua New Guinea and the Philippines not specified in the UoC vessels listed in Appendix 5 which also operate in accordance with specified policies and agreements.</td></tr>
<tr><td>Geographical area</td><td>UoA 1-3: EEZ’s of PNA signatories (Kiribati, Tokelau, Tuvalu, Solomon Islands, Nauru, Marshall Islands, Federated States of Micronesia, Papua New Guinea and Palau), PNG archipelagic waters and WCPFC high seas
UoA 4-6: EEZ’s of PNA signatories (Kiribati, Tokelau, Tuvalu, Solomon Islands, Nauru, Marshall Islands, Federated States of Micronesia, Papua New Guinea and Palau), PNG archipelagic waters</td></tr>
</table>
</td></tr>
<tr><td>3</td><td>Date certified</td><td>Date of expiry</td></tr>
<tr><td></td><td>11 May 2020</td><td>10 November 2025</td></tr>
<tr><td>4</td><td colspan="2">Audit type and number</td></tr>
<tr><td></td><td colspan="2">Year 2 Surveillance with early application of Section SE.</td></tr>
<tr><td>5</td><td colspan="2">Surveillance level</td></tr>
<tr><td></td><td colspan="2">Surveillance Level 6</td></tr>
<tr><td>6</td><td colspan="2">Surveillance team leader</td></tr>
</table>

	Gabriela Anhalzer – SCS Global Services – Lead Auditor Gabriela Anhalzer received a Master's degree in coastal environmental management from Duke University. Ms. Anhalzer has several years of experience in marine conservation and fisheries, she has worked as an independent consultant conducting evaluations of fishery improvement projects and as a fisheries policy and stakeholder specialist. She has also worked as an associated researcher in Latin America for sea turtle population studies, sea bird census, and supporting stakeholder engagement in participatory management of marine protected areas. Ms. Anhalzer has provided technical support for numerous MSC assessment and possess a comprehensive understanding of MSC fisheries standard and stages; meeting MSC's team leader qualifications and competency criteria. **Gabriela Anhalzer meets the Team leader qualifications, in that she has:** ✓ Completed training meeting requirements in Table 1 of GCRV2.4, as evidenced by the certificate of passing auditor training for the ISO course 19011 ✓ Holds a Masters degree in coastal environmental management, and has over five years' experience in the fisheries sector related to stakeholder management and facilitation. ✓ Completed of the latest MSC training modules applicable to this assessment within the past five years (V2.2 Team Leader MSC modules in January 2021). ✓ Has undertaken several MSC fishery assessment and surveillance site visits as a team member in the last 5 years including: Surveillance for the southern Gulf of California Thread Herring Fishery in Sinaloa & Nayarit Mexico, the Small pelagics fishery in Sonora, Gulf of California, US Atlantic Sea Scallop Fishery, US Atlantic Spiny Dogfish Fishery, and the North-eastern Tropical Pacific Purse Seine Yellowfin and Skipjack Tuna Fishery. ✓ Has demonstrated experience in applying different types of interviewing and facilitation techniques, as verified by SCS records audit witness records and previous audit reports. ✓ Is competent in the MSC Standard and current Certification Requirements, auditing techniques, and communication and stakeholder facilitation techniques, as verified by the completion of ISO 19011 auditor training. ✓ Has affirmed she holds no conflict of interest
7	**Surveillance team members**
	All Team Members meet the following Team Member requirements: **Dr. Gerard DiNardo, Senior Technical Specialist, Responsible for Principle 1** Dr. Gerard DiNardo has over 25 years of experience as a research fishery scientist and senior manager

for NOAA Fisheries in the United States, as well as extensive knowledge, understanding, and involvement in fishery issues and processes of tuna-RFMOs and RFOs. Ensuring sustainable development and management of fisheries, including the identification of research and plans of action to support effective management decision making has been the focus throughout his career, and with a strong background and understanding of international fisheries and MSC. He holds an MSc from Long Island University, C.W. Post Center and a Ph.D from University of Maryland, where his dissertation topic was FISHMAP: An Expert System for Sampling Fish Populations.

Gerard was appointed as the Fisheries Resources Division Director of the Southwest Fisheries Science Center in San Diego, CA from 2015 to 2019. Previously, he held several positions at NMFS, including Supervisor of the Stock Assessment Program in the Fisheries Research and Monitoring Division at the Pacific Islands Fisheries Science Center. Dr. DiNardo was multiple publications related to the assessment of pelagic species, including tuna. He's held positions as Co-Chair of the Joint PICES/ISC Working Group on Ocean Conditions and the Distribution and Productivity of Highly Migratory Fish for the North Pacific Marine Science Organization, standing member of the NMFS National Stock Assessment Methods Steering Committee, science expert on the U.S.A. Delegation to the Western Central Pacific Fisheries Commission and Chair of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC).

Dr. DiNardo has served as Principle 1 and Principle 2 Team member on several purse-seine and longline MSC fishery tuna assessments managed under IOTC, WCPFC, IATTC, and ICCAT RFMOs. He offers extensive experience assessing the status and management of tuna stocks and their impacts on ecosystem elements in accordance with the MSC Standard and Fishery Certification Process.

Dr. Gerard DiNardo 's experience satisfies the MSC requirements for a Team Member as described in PC2 (FCP v2.2):

- ✓ With relevant degree (Ph.D. from the University of Maryland) and over 25 years of experience as a research fishery scientist and senior manager for NOAA Fisheries in the United States, verified by CV.
- ✓ Has passed the MSC compulsory training modules for Team Members within the last 5 years (2019).
- ✓ Affirms he has no conflict of interest in conducting this assessment.

Ms. Jess Melgey, Responsible for Principle 2

Ms. Melgey has a Bachelor of Science in Biology, an M.S. in Fisheries Science, and more than twelve years of experience as a professional in fisheries science, policy, and management. She is widely experienced in the impacts of fisheries on aquatic ecosystems including to habitat, endangered and threatened species, and non-target bycatch. She has spent time in both the public and private sectors, and is familiar with permitting, policy, and regulatory issues in large- and small-scale fisheries. As a fisheries observer and observer data editor and later as a fishery analyst for the New England Fishery Management Council, she gained familiarity with a wide range of vessel and gear types and understands much of the inner workings of commercial fisheries. She spent time aboard commercial vessels as an observer, a contract survey scientist, and a graduate student, and maintains a strong

interest in collaborative research and fisheries sustainability.

Ms. Jessica Melgey's experience satisfies the MSC requirements for a Team Member as described in PC2 (FCP v2.2):

- ✓ With relevant degree (Bachelor of Science in Biology, Boston College; Master of Science in Living Marine Resources Science and Management, University of Massachusetts School for Marine Science and Technology) and over 5 years of research experience in management or research experience in a marine conservation biology, fisheries, natural resources or environmental management position.
- ✓ Has passed the MSC compulsory training modules for Team Members within the last 5 years (2022).
- ✓ Affirms they have no conflict of interest in conducting this assessment.

Dr. Michael Harte, Responsible for Principle 3

Dr Michael Harte is a Professor in the College of Earth, Ocean and Atmospheric Sciences at Oregon State University in the USA, having trained in physical geography and economics in New Zealand and Canada. He is recognized internationally as a fisheries and marine policy adviser, researcher, educator and program leader. He has held senior positions in the private, public, academic and NGO sectors in Australia, the US, the Falkland Islands, Canada and New Zealand.

Dr Harte has extensive policy and economic analysis experience working with commercial and small-scale fisheries, ecosystem-based fisheries management, bio-economic analysis of fisheries, climate impacts on fisheries, eco-labelling, cost recovery and resource rents in fisheries, and the development of policies and regulations associated with the monitoring, control and surveillance of fisheries, as well as work on seafood markets and traceability. His work spans both academic and practical fishery management domains.

Dr. Harte has served as Principle 3 Team member on tuna MSC fishery tuna assessments managed under WCPFC and IATTC RFMOs. He offers extensive experience assessing tuna fisheries and the complex management and governance of high-seas fisheries in accordance with the MSC Standard and Fishery Certification Process.

Dr. Michael Harte's experience satisfies the MSC requirements for a Team Member as described in PC2 (FCP v2.2):

- ✓ With relevant degree a PhD in Geography from University of Victoria, and over 5 years of research experience in management or research experience in a marine conservation biology, fisheries, and natural resources.
- ✓ Has passed the MSC compulsory training modules for Team Members (FCP v2.2 within the last 5 years (September 2020).
- ✓ Affirms they have no conflict of interest in conducting this assessment.

The team collectively meets at least three of the MSC Table PC3 team qualification and competency criteria:

	✓ Dr. DiNardo meets the qualifications for fish stock assessment with: 3 years' or more experience of applying relevant stock assessment techniques being used by the fishery under assessment. Dr. DiNardo has Primary authorship of roughly 30 peer-reviewed stock assessments of a type used by the fishery under assessment. In addition, Dr. DiNardo has 26 years of experience with NOAA, National Marine Fisheries Service as a stock assessment scientist and later Program Leader for the Stock Assessment Program at the Pacific Island Fisheries Science Center and later the Southwest Fisheries Science Center as Director of the Fisheries Resource Division. In this capacity he was responsible for conducting stock assessments on highly migratory species (i.e., tuna), demersal fish species (snappers and groupers), and crustaceans (lobsters) in the Pacific Ocean, and overseeing the application of modelling platforms to advance stock assessment research. ✓ Dr. DiNardo meets the qualifications for 'Fish stock biology/ecology' with 3 years' or more experience working with the biology and population dynamics of the target or species with similar biology, as evidenced by his research and publications on post release mortality and development of the HI longline observer program. Dr. DiNardo also Chaired the International Scientific Committee (2010- 2017), an RFO tasked with completing stock assessments for the WCPFC on highly migratory stocks in the North Pacific Ocean. ✓ Jessica Melgey meets the qualifications for "Fishing impacts on aquatic ecosystems" with 3 years' or more experience in research into, policy analysis for, or management of, the impact of fisheries on aquatic ecosystems including at least two of the following topics: i. Bycatch. ii. Endangered, threatened, or protected (ETP) species, iii. Habitats, iv. Ecosystem interactions, as evidenced by her more than 12 years of professional experience in fisheries including conducting numerous impacts analyses for threatened and endangered species and essential fish habitat. This experience is verified by her CV. ✓ Dr. Harte meets the qualifications for 'Fishery management and operations 'with 3 years' or more experience as a practicing fishery manager and/or fishery/policy analyst/consultant. As evidenced by Prof. Harte's efforts on the Science and Statistical Committee of the US Pacific Fisheries Management Council since 2016. He serves on the Social and Economics, Highly Migratory Species, Ecosystem, am Salmon subcommittee where he reviews a wide range of technical analysis that is provided to the US Pacific Fisheries Management Council. He has provided Fisheries Advise since 1998 working for Industry, Govt and academia. ✓ Dr. Harte has current knowledge of WCPFC management , language and local fishery context. As evidenced by several years of experience working on MSC assessments in the region, and other past projects in Papua New Guinea and the WCPO.
8	**Audit time and location**
	SCS invited participants to attend the site visit scheduled for 9-11 October in Port Moresby and Lae, Papua New Guinea. All members of the team were available to meet with stakeholders in person or remotely.
9	**Assessment and review activities**

	The surveillance audit will be conducted in accordance with MSC FCP v2.3, 7.29.15 & 7.29.16 and will include actively seeking the views of the client on: i. Any changes to the information provided in the Scope Declaration as per 7.4.1.1 (MSC FCP v2.3). ii. Changes to the UoA and its management. iii. Performance in relation to any relevant conditions of certification. iv. Any developments or changes within the UoA that affect traceability and the ability to segregate MSC from non-MSC products. v. Any other significant changes in the UoA. In addition, the CAB will hold interviews and actively seek the views of stakeholders and surveillance audit participants to ensure that the team is aware of any stakeholder concerns. Should stakeholders not wish to be interviewed, the team will inform them that they may submit written information to the team using the 'MSC Template for Stakeholder Input into Surveillance Audits'.

2.2 Version details

Table 2. Fisheries program documents versions

Document/Assessment Tree	Version number/Type
MSC Fisheries Certification Process	**Version 2.3**
MSC Fisheries Standard	**Version 2.01**
Assessment tree	**Default**
MSC General Certification Requirements	**Version 2.6**
MSC Surveillance Reporting Template	**Version 2.2**

2.3 Update on the fishery

2.3.1 Changes to Management Systems

2.3.1.1.1 WCPFC

There have not been any major updates in the management of the PNG Purse Seine Fishery for Skipjack, Yellowfin and Bigeye Tuna since the 2021 PCR was published. New Conservation and Management Measures (ICMMs) implemented in 2021 and 2022 by the WCPFC are listed in Table 3.

Table 3. Updates to CMMs Implemented in the WCPFC 2021, 2022 and 2023. (From WCPFC website, October 2023).

CMM 2021-01	Conservation and Management Measure for bigeye, yellowfin and skipjack tuna in the Western and Central Pacific Ocean
CMM 2021-02	Conservation and Management Measure for Pacific Bluefin Tuna
CMM 2021-03	Conservation and Management Measure on the Compliance Monitoring Scheme
CMM 2021-04	Conservation and Management Measure for Charter Notification Scheme
CMM 2022-01	Conservation and Management Measure on a Management Procedure for WCPO Skipjack Tuna
CMM 2022-02	Conservation and Management Measure for North Pacific Swordfish
CMM 2022-03	Conservation and Management Measure on Establishing a Harvest Strategy for key fisheries and stocks in the Western and Central Pacific Ocean
CMM 2022-04	Conservation and Management Measure for Sharks
CMM 2022-05	Standards, specifications and procedures for the Western and Central Pacific Fisheries Commission Record and Fishing Vessels.

The most recent changes and updates include:

CMM 2022-01 Conservation and Management Measure on a Management Procedure for WCPO Skipjack Tuna

CMM 2022-01 replaces CMM 2015-06 (2016 – 2023) and establishes an interim skipjack tuna management procedure to ensure that:

- The spawning potential depletion ratio of skipjack tuna is maintained on average at a level consistent with the target reference point; and
- The spawning potential depletion ratio of skipjack tuna is maintained above the limit reference point with a risk of the limit reference point being breached no greater than 20 percent.

It sets two Reference Points: (1) A target reference point and (2) limit reference point. It also sets out a Management Plan that includes:

- A Harvest Control Rule.
- The Estimation Model.
- Data Requirements and the Monitoring Strategy.
- A procedure for Exceptional Circumstances.
- Provisions for Special Circumstances.

CMM 2022-03 Conservation and Management Measure on Establishing a Harvest Strategy for key fisheries and stocks in the Western and Central Pacific Ocean

CMM 2022-03 replaces CMM 2014-06 and commits the Commission to implement a harvest strategy approach for each of the key fisheries or stocks under the purview of the Commission and sets out a process for doing this. Each harvest strategy will have the following elements:

- Defined operational objectives, including timeframes, for the fishery or stock ('management objectives').
- Target and limit reference points for each stock ('reference points').
- Acceptable levels of risk of not breaching limit reference points ('acceptable levels of risk').
- A monitoring strategy using best available information to assess performance against reference points ('monitoring strategy').
- Decision rules that aim to achieve the target reference point and aim to avoid the limit reference point ('harvest control rules'), and
- An evaluation of the performance of the proposed harvest control rules against management objectives, including risk assessment ('management strategy evaluation').

CMM 2022-04 Conservation and Management Measure for Sharks

CMM 2022-04 updates and replaces CMM 2019-04 and requires the application of the precautionary approach and an ecosystem approach to fisheries management, to ensure the long-term conservation and sustainable use of sharks. Among its provisions it:

- Requires the full utilization of sharks including a fins naturally attached requirement and prohibits finning. It prohibits CCM flagged vessels from retaining or landing oceanic whitetip or silky sharks.
- Prohibits the setting of purse seine on a school of tuna associated with a whale shark.
- Requires comprehensive and record keeping demonstrating compliance with the CMM.

2.3.2 Changes or Additions/Deletions to Regulations

Philippine flagged vessels fishing in the PNG national waters are regulated by the Philippines Bureau of Fisheries and Aquatic Resources. Changes in regulations since the last Surveillance audit include:

- FAO 270: Rules and Regulations on the Operations of Philippines Flagged Fishing Vessels Operating in Distant Waters (Beyond National Jurisdiction https://www.bfar.da.gov.ph/wp-content/uploads/2023/02/FAO-270.pdf

- FAO 271: Rules and Regulations for the Protection of Cetaceans Whale Sharks from purse seine and ringnet fishing operations https://www.bfar.da.gov.ph/wp-content/uploads/2023/05/FAO-271-s.-2023-Rules-Regulations-for-the-Protection-of-Cetaceans-Whale-Sharks-from-purse-seine-ring-net-fishing-operations.pdf
- FAO 272: Rules and Regulations for the Conservation and Management of Sharks for Philippines Fishing Vessels- https://www.bfar.da.gov.ph/wp-content/uploads/2023/08/FAO-272-dated-on-August-11-2023.pdf

PNG updated its regulations (National Gazette No G387 updating G312) that specify which CMMs apply to the PNG EEZ and to PNG flagged vessels fishing outside of PNG fisheries waters. National Gazette No G387 included the CMMs listed in Table 3. Prior CMMs listed in G312 in cease to where the CMM is amended or replaced by a further CMM or by notice to that effect published in the National Gazette.

2.3.3 Personnel Changes in Science, Management, or Industry and Their Impact on the Management of the UoA

PNG FIA has hired Ms. Nialangis A. Posanau as Sustainability & MSC Coordinator.

2.3.4 Potential Changes to Scientific Information, Including Stock Assessments

Western Central Pacific Ocean – Skipjack Tuna

WCPO Skipjack – Status of Stocks

Stock assessments for Skipjack Tuna are undertaken by the Oceanic Fisheries Program (OFP) of the Secretariat for the Pacific Community (SPC) as the scientific advisory body for the WCPFC. Draft results of assessments are submitted to the meeting of the WCPFC's Scientific Committee (SC) for discussion and review by members, after which it is revised and a final report presented to the WCPFC plenary, usually held in December.

The assessment reports contain descriptions of structural assumptions, model parameterization and priors, as well as stock status determination. Stock assessments for Skipjack Tuna have been conducted regularly since 2000, the most recent being in 2022 using the integrated statistical modeling framework MULTIFAN-CL with model input based mainly on catch and effort data for various fleets, size data and tagging data (Castillo-Jordan et al. 2022). An additional three years of data were available since the previous assessment in 2019, and the model extends through to the end of 2021. The assessment applies the same 8–region model structure that was used for management advice from the 2019 assessment (Figure 2). New developments to the stock assessment include:

- Application of a new MFCL catch conditioned approach to the estimation of fishing mortality, plus inclusion of survey fisheries and a likelihood component for the indices from those survey fisheries.

- Application of a self-scaling approach to estimate effective sample size, the Dirichlet-multinomial likelihood, with growth estimation within the diagnostic model.

- Application of variable tag mixing periods for tag release groups based on simulations using individual based modelling of tag mixing processes.

- Development of an alternative growth model based on tag recapture growth increments and daily aging from otoliths.

- Development of new CPUE indices based on unassociated (free-school) fishing for the purse seine fisheries in equatorial model regions using a novel travel distance effort metric, truncation of the pole-line-index in Region 8, and grouping of selected CPUE indices to inform regional biomass scaling.

Teears assessment was supported by analyses of catch and effort data for pole-and-line and purse seine fisheries (Teears et al., 2022), a novel approach to estimating tag mixing periods (Scutt Phillips et al., 2022), a review and new analysis of skipjack growth (Macdonald et al., 2022), re-analysis of tag seeding experiments to inform tag reporting rate priors (Peatman, 2022), and a new analysis of tagger effects (Peatman et al., 2022).

The main influential change in the progression from the 2019 to 2022 diagnostic model was the introduction of grouped survey fisheries with a separate likelihood component as part of the switch to a catch conditioned model, which resulted in a large increase in estimated spawning potential and a more optimistic stock status compared to the 2019 diagnostic model. We note other changes and data updates had minor influences compared to the inclusion of survey fisheries. Time series of total annual catch by fishing gear for all regions is shown in Figure 2.

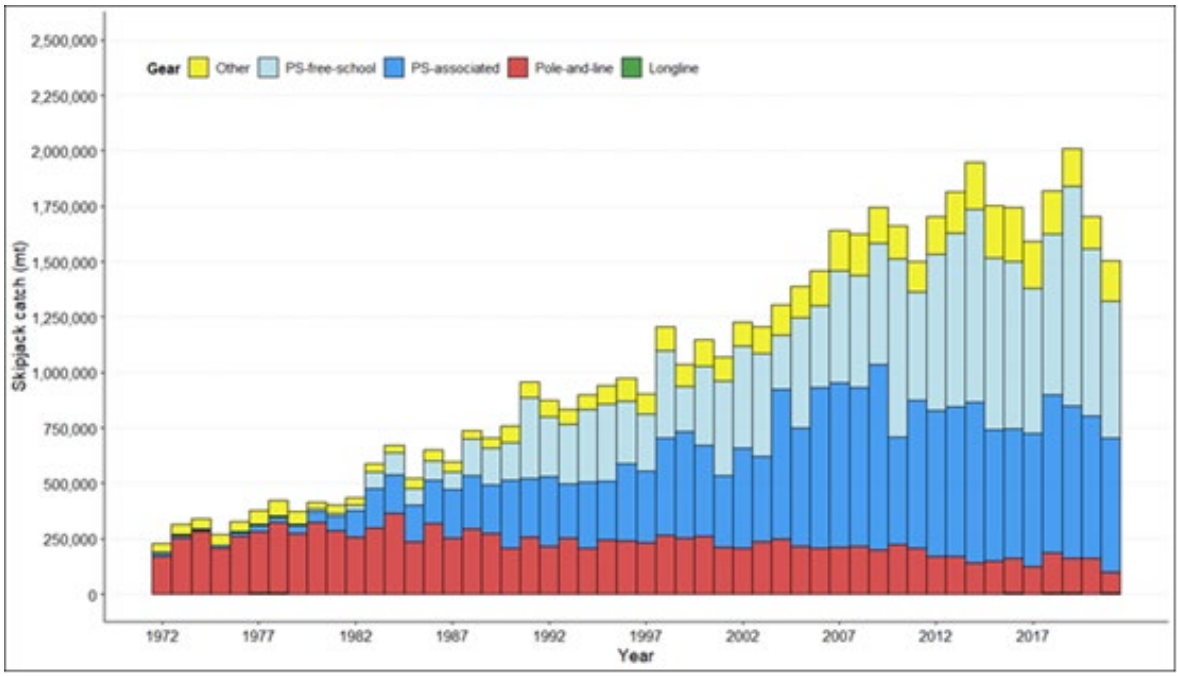


Figure 1. Time series of total annual catch by fishing gear for all regions

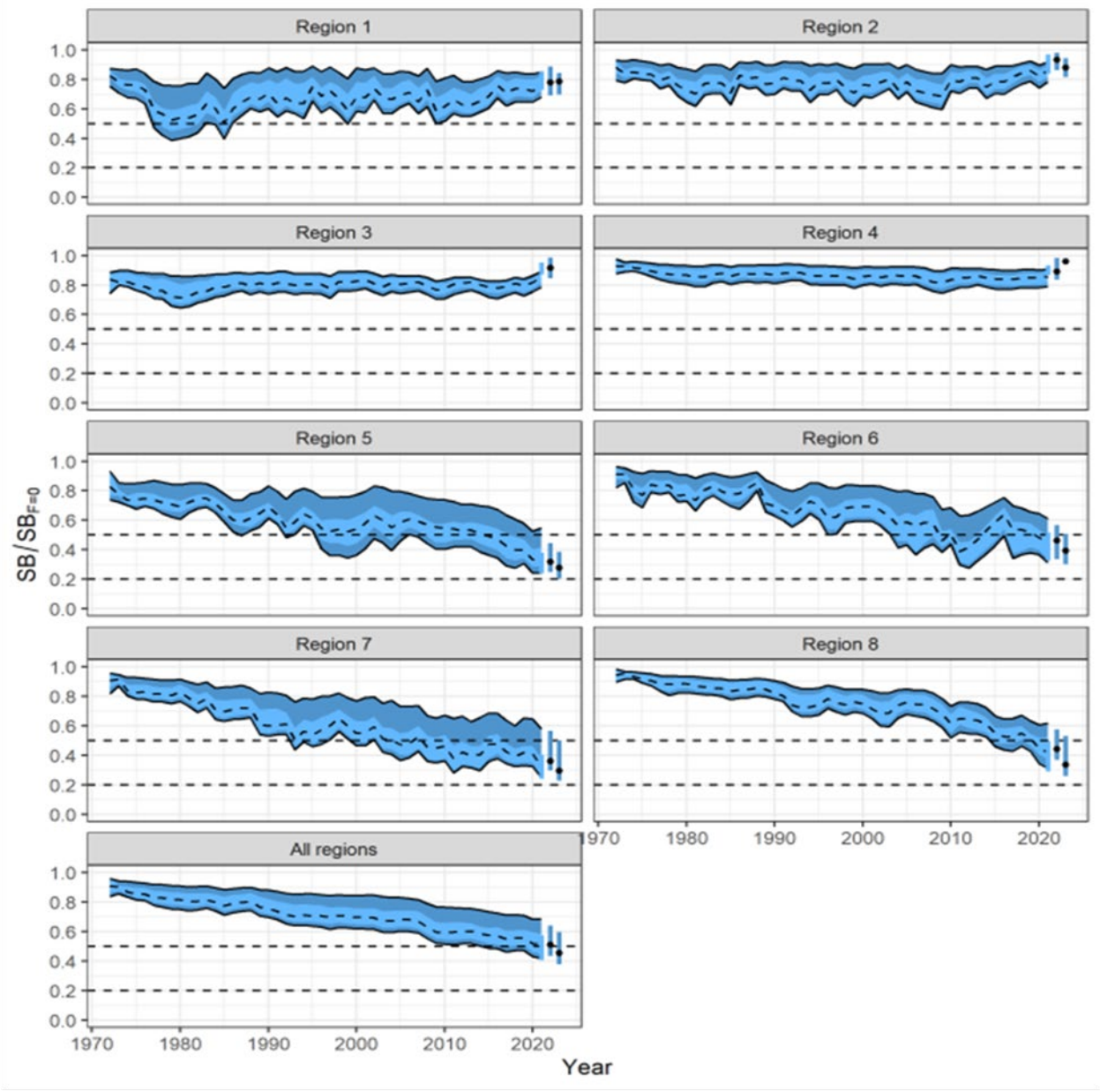


Figure 2. overall spawning potential by region and summed across region for the diagnostic model (from WCPFC-SC 2022).

The overall spawning potential by region and summed across region for the diagnostic model is shown in Figure 3. The estimated annual average juvenile and adult fishing mortality for the diagnostic model is shown in Figure 4. Estimated temporal overall spawning potential for skipjack tuna summed across regions from the diagnostic model, where the shaded region is ± 2 standard deviations (i.e., 95% CI) (from WCPFC-SC 2022).

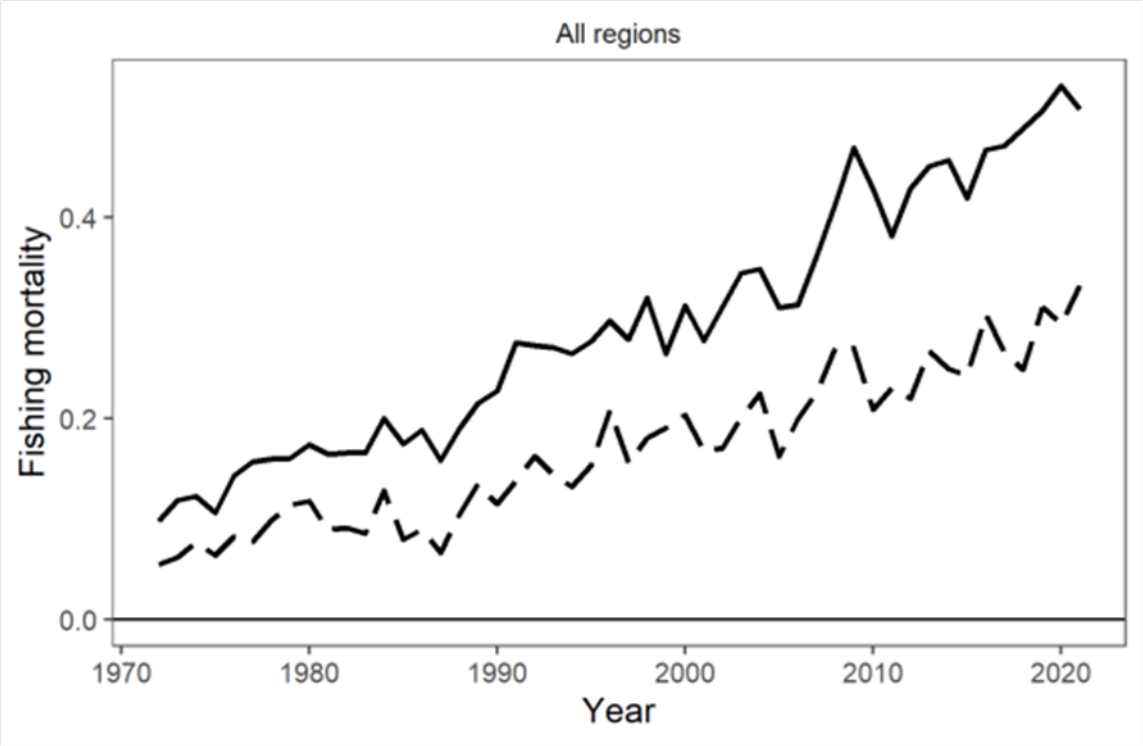


Figure 3. Estimated annual average skipjack tuna juvenile (dashed line) and adult (solid line) fishing mortality for the diagnostic model (from WCPFC-SC 2022).

Fishing mortality continues to increase over time for the adult and juvenile components of the stock, with fishing mortality being consistently higher for adults. The median and 80th percent quantile trajectories of fishing depletion for models in the weighted structural uncertainty grid is shown in Figure 5 where it can be seen that the median has been below the target since 2009. The Kobe plot (Figure 6) shows the recent fishing mortality and spawning potential relative to spawning potential at MSY for all models in the structural uncertainty grid for (i) spawning potential in the recent time period (2018–2021) and (ii) spawning potential in the latest time period (2021). The structural uncertainty grid for the 2022 skipjack stock assessment was constructed from 3 axes of uncertainty with 2–3 levels for each, resulting in a total of 18 models (Table 10). The averages and quantiles across the 18 models in the grid for all of the reference points and other quantities of interest are presented in Table 11.

The SC noted that total catch in 2021 was 1,547,945t, a 10% decrease from 2020 and a 14% decrease from the 2016-2020 average. Purse seine catch in 2021 (1,254,022t) was a 11% decrease from 2020 and a 13% decrease from the 2016-2020 average. Pole and line catch (97,908t) was a 39% decrease from 2020 and a 37% decrease from the 2016-2020 average catch. Catch by other gears totaled 192,182t and was a 25% increase from 2020 and 5% decrease from the average catch in 2016-2020.

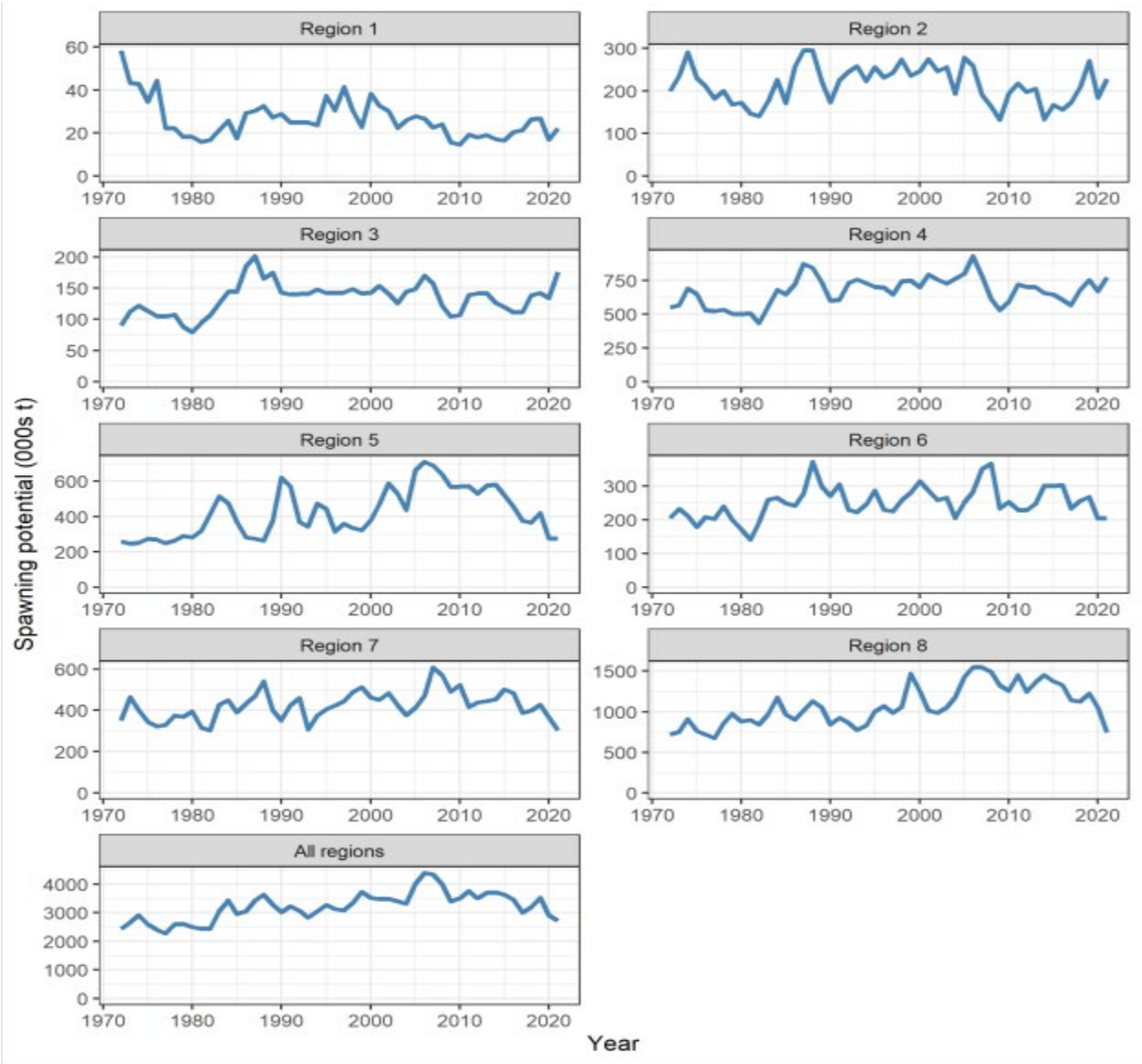


Figure 4. Trajectories of skipjack tuna spawning potential depletion by region and summed across regions for the model runs included in the structural uncertainty grid over the period 1972-2021. The dashed line in the ribbon represents the median. The lighter band shows the 50th percentile, and the dark band shows the 80th percentile of the model estimates. The bars at the right of each ribbon indicate the median (black dots) and 80th percentile

range for (left bar) SBrecent/SBF=0 and (right bar) SBlatest/SBF=0. The horizontal dashed lines indicates the agreed limit reference point (0.2) and interim target reference point (0.5) (from WCPFC-SC 2019).

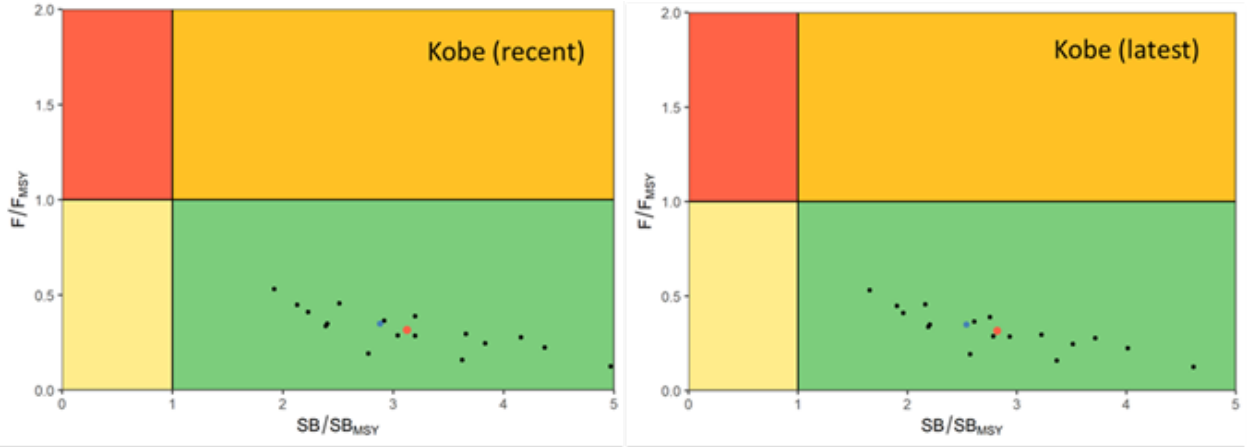


Figure 5. Skipjack tuna Kobe plots for the recent (2018-2021, left) and latest (2021, right) spawning potential summarizing the results for each of the models in the structural uncertainty grid. Based on results of the 2022 stock assessment the median level of spawning potential depletion (SBrecent/SBF=0) from the uncertainty grid was 0.51 with an 80% probability interval of 0.43 to 0.64. There were no individual models where SBrecent/SBF=0 < 0.2, which indicated that the probability that recent spawning biomass was below the LRP was zero. The SC also noted that the grid median of Frecent/FMSY was 0.32, with a range of 0.18 to 0.45 (80% probability interval) and according to WCPFC reference points the stock is not overfished and is not experiencing overfishing

Based on output from the structural uncertainty grid the SC noted that tag mixing assumptions that applied longer tag mixing periods, and the externally estimated growth curve, resulted in more optimistic estimates of spawning potential depletion and spawning potential and lower fishing mortality.

The SC acknowledged that the spatial extent of the Japanese pole-and-line fishery has decreased over the time period and that the future use of this standardized CPUE index within future stock assessments is uncertain.

Therefore, the SC acknowledged that further study of alternative indices of abundance is warranted, such as investigation of standardizing the purse seine fishery and evaluation of the feasibility of conducting fishery independent surveys.

Table 4. Structural uncertainty grid for the 2022 WCPO skipjack tuna stock assessment. Note settings associated with G1 under Option 1 and T2 under Option 2 are settings for the diagnostic (from WCPFC-SC 2022).

Axis	Levels	Option 1	Option 2	Option 3
Tag mixing	3	T1, D=0.1 (longer period)	**T2**, D=0.2 (intermediate)	T3, D=0.3 (shorter)
Growth	2	**G1**, Internally estimated (Dirichlet-multinomial)	G2, Externally estimated (otolith and tagging data)	
Steepness	3	0.65	**0.8**	0.95

Table 5. Summary of reference points over the 18 models in the structural uncertainty grid. (from WCPFC-SC 2022).

	Mean	Median	Min	10%ile	90%ile	Max	Diagnostic model
C_{latest}	1530209	1530208	1530207	1530207	1530212	1530212	1530207
F_{MSY}	0.23	0.23	0.18	0.19	0.27	0.28	0.24
fmult	3.61	3.18	1.88	2.22	5.54	8.08	2.86
F_{recent}/F_{MSY}	0.32	0.32	0.12	0.18	0.45	0.53	0.35
MSY	2933489	2648400	2046000	2167840	4777200	4868000	2416000
SB_0	7958888	7204500	5317000	5611000	12842000	14390000	5686000
$SB_{F=0}$	8073171	7616930	5953338	6156944	12310363	12744728	6147339
SB_{latest}/SB_0	0.48	0.48	0.37	0.41	0.56	0.60	0.48
$SB_{latest}/SB_{F=0}$	0.47	0.46	0.35	0.38	0.60	0.61	0.44
SB_{latest}/SB_{MSY}	2.82	2.68	1.65	1.95	3.81	4.62	2.54
SB_{MSY}	1419366	1335000	806300	870530	1984600	2925000	1073000
SB_{MSY}/SB_0	0.18	0.18	0.13	0.13	0.22	0.22	0.19
$SB_{MSY}/SB_{F=0}$	0.17	0.17	0.11	0.13	0.22	0.23	0.17
$SB_{recent}/SB_{F=0}$	0.52	0.51	0.41	0.43	0.64	0.66	0.50
SB_{recent}/SB_{MSY}	3.12	2.98	1.92	2.20	4.22	4.97	2.88
$Y_{Frecent}$	1896888	1892400	1621600	1683880	2116000	2282800	1762400
$(SB_{recent}/SB_{F=0})/(SB_{2012}/SB_{F=0})$	0.84	0.85	0.82	0.82	0.86	0.87	0.85

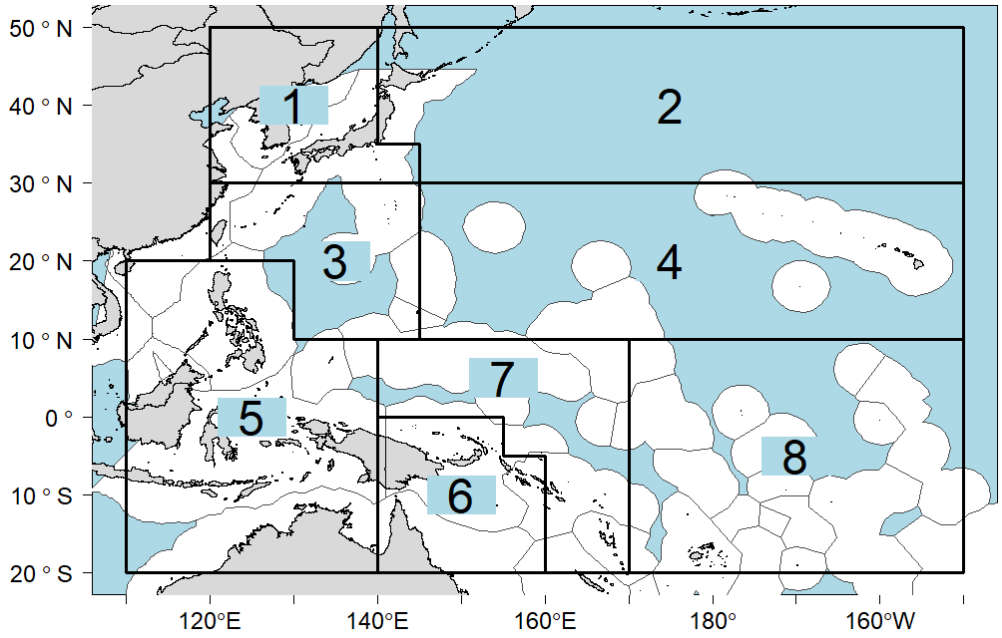


Figure 6. Skipjack tuna eight region spatial structure used in the 2022 stock assessment model (from WCPFC-SC 2022).

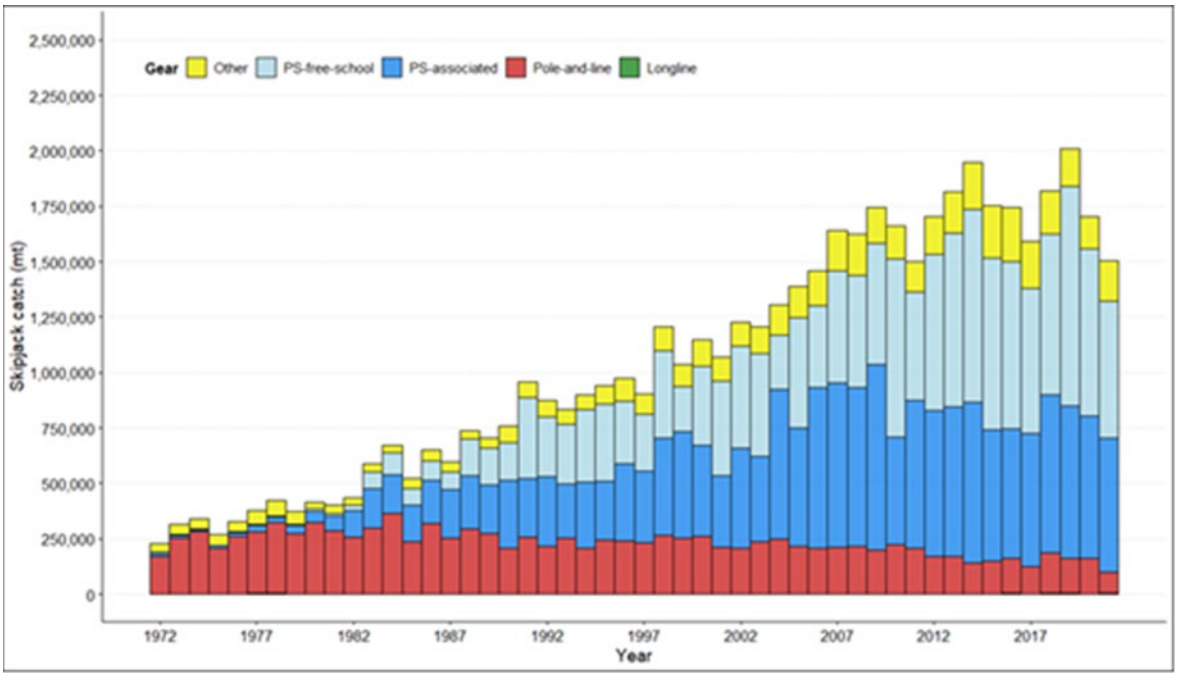


Figure 7. Annual catches of skipjack tuna by gear type in the WCPO area covered by the assessment (from WCPFC-SC 2022).

WCPO Skipjack – Fishing and Management

There are four distinct levels of management for the UoAs which are described more fully under Principle 3: 1) RFMO management by the WCPFC, 2) regional management by the PNA and FFA (noting that the vast majority of the catch of both Skipjack and Yellowfin are taken from PNA waters), 3) management by the Coastal States including Papua New Guinea (PNG), Federated States of Micronesia (FSM), Kiribati, Nauru, Republic of the Marshall Islands (RMI), Solomon Islands (SI), and 4) flag state management by Japan. Note that FSM, PNG, Kiribati, Nauru, RMI and SI are member states of the PNA. This section provides some background to the first two of these levels of management.

2.3.4.1.1 WCPFC management

In all instances, modifications to the strategies were in response to changes in stock status or fishing practices. For WCPO SKJ, the current WCPFC harvest strategy includes the Tropical Tuna Measure (TTM), the management procedure (MP), and the stock assessment, which have different roles. The TTM describes the implementation of the specific limits and measures for the WCPO SKJ stock (as well as for WCPO YFT and WCPO BET). The MP describes the technical elements of the harvest control rule (HCR) that specify how the TTM limits and measures are calculated to respond to stock status. The MP also specifies a stock status "estimation model" used to determine the input to the HCR. The stock assessment is used to monitor stock status and the performance of the MP.

The TTM is currently contained in CMM 2021-01 and is due to expire on 15 February 2024. The current TTM builds on previous strategies for tropical tunas in the WCPO, and the objective for SKJ is to maintain spawning biomass on an average level consistent with the interim target reference point of 50% of the spawning biomass in the absence of fishing, adopted in accordance with CMM 2015-06. To facilitate this goal, provisions in CMM 2021-01 include a limit on the number of FADs that purse seine vessels can deploy with activated instrumented buoys, FAD closure periods, zonal and high seas effort control for purse seine vessels, catch retention policies, monitoring and control measures, purse seine vessel limits, and strict data reporting requirements.

2.3.4.1.2 The PNA Vessel Day Scheme

The objective of the VDS is "To support collaboration between Parties to enable them to maximize their net economic returns from the sustainable use of tuna resources by purse seine vessels" (PNA 2016). It was established in 2006 under the Palau Arrangement (PNA 2016) and became operational on 1 December 2007, initially limiting effort levels of PNA countries to 2004 levels. In brief, fishing days are allocated to each PNA country and can be traded amongst the eight countries in a single licensing year under conditions designed to ensure that the Total Allowable Effort (TAE) is not exceeded.

The VDS applies to purse seine fishing within the EEZs of PNA countries, where the majority of purse seine fishery takes place within the WCPFC Convention Area. Furthermore, the Third Arrangement Implementing the Nauru Agreement prescribed closures to purse seine fishing, by vessels licensed to fish in PNA waters, of areas of the high seas from 1 January 2011 that were surrounded by the EEZs of PNA countries (from 10°N to 20°S latitude and 170°E to 150°W longitude, equating to an area of 4,555,000 sq. km) (PNA 2010, Banks et al. 2011). This scheme (described in detail in Banks et al. 2011)

established a limit on the total number of fishing days that could be fished in PNA members' EEZs, with a system of tradable fishing days allocated to each of the PNA Parties as Party Allowable Effort (PAE). The VDS was established to replace the existing limit of 205 purse seine vessels set under the Palau Arrangement for the Management of the Western Purse Seine Fishery. This Arrangement was established in response to concerns over the status of bigeye tuna in particular, as well as a desire to reduce purse seine fishing effort in the WCPO (Dunn et al. 2006, Banks et al. 2011). The VDS was also designed to conserve the target stocks and enhance the value of the purse seine fishery by creating greater competition for access as new foreign fishing partners not allocated licenses under the 205 vessel limit could enter the fishery.

Since 2008, the VDS has been an important element of the WCPFC purse seine measures to conserve bigeye (CMM 2008-001). Currently, the scheme has aimed to limit the catch to 2010 levels by restricting effort of vessels within the scheme to less than 2010 levels (the reduction being intended to allow for increasing fishing efficiency). CMM 2016-01 reiterated the requirement (initially contained in CMM 2011-01 and subsequently carried over in subsequent measures) that Coastal States within the Convention Area that are PNA members shall restrict the level of purse seine effort in their EEZs to 2010 levels through the PNA Vessel Days Scheme; and that WCPFC Commission Members, Cooperating Non-Members and Participating Territories (CCMs) shall support the ongoing development and strengthening of the PNA VDS including implementation and compliance with the requirements of the VDS as appropriate. Catches from vessels outside the scheme have not been similarly constrained.

Article 12 of the Palau Arrangement (PNA 2016) states that the Total Allowable Effort will be set having regard to:

- the best available scientific, economic, management and other relevant advice and information;
- the provisions of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean;
- the objectives of the Management Scheme; and
- any submission on this issue from any party, individual or organisation.

A brief analysis of most of the relevant scientific, economic and management information and advice on which the TAE is based is included in a Working Paper to the annual meeting of the Parties to the Palau Arrangement which is available on the PNA website (PNA 2017). This paper also contains sections concerning WCPFC considerations and MSC considerations, with the stated intention of "clearly recording the link between the TAE and the relevant WCPFC measure and the scientific advice".

Nevertheless, the basis of total number of fishing days allowed, and particularly its relationship to the scientific advice about stock status of Skipjack Tuna (the most economically important species caught by purse seine accounting for about 70% of the total catch (PNA 2015)) is not articulated in the form of a formal harvest control rule. Although the minutes of the PNA meetings at which the recommendations in the TAE Working Papers are discussed and the actual TAEs are set are not publicly available, extracts of the meeting record of these discussions for 2015, 2016 and 2017 which were provided to the

assessment team show that the recommendations of the VDS Technical and Scientific Committee have been adopted in each of these years, and without discussion in two of these three years.

There have previously been concerns expressed about a lack of clarity and openness in PNA decision-making with respect to the establishment and operation of the VDS Total Allowable Effort, particularly with respect to links to the requirements of WCPFC CMMs and the scientific advice (Banks et al. 2011). Despite being given copies of PNA meeting minutes, we consider that a lack of clarity about the links between the scientific advice, VDS effort allocations, and CMM provisions persists. Also, a concern from a stock sustainability perspective are concerns over how the VDS will deal with evidence of effort creep from increasing size of fishing vessels and increases in the number of sets per fishing day and tonnage caught per fishing day (Pilling et al. 2017).

2.3.4.1.3 WCPO Skipjack Harvest Strategy

The harvest strategy for WCPO SKJ has progressed significantly and consists of several contributing and integrated components. Explicit biological reference points for WCPO SKJ have been adopted, as well as an extensive interim management procedure that incorporates all elements of a harvest strategy ('the combination of monitoring, stock assessment, harvest control rules and management actions, which may include an MP [Management Plan] or an MP (implicit) and be tested by Management Strategy Evaluation (MSE)', MSCI Vocabulary v1.1).

An interim WCPO SKJ management procedure (CMM 2022-01) was adopted at WCPFC19 in December 2022. The MP was developed through management strategy evaluation (MSE), where several candidate MPs were proposed and simulation tested using an MSE framework to determine likely performance against a range of plausible scenarios, uncertainties, and performance indicators. These evaluations were discussed at a science-management dialogue meeting, resulting in additional testing of certain candidate HCRs, for example, for robustness to low recruitment. A "dry run" was conducted for the adopted HCR during its development (WCPFC 2023, Scott et al. 2022b).

The MP comprises the harvest control rule (Figure 3) and more formal specifications of the associated estimation model used to estimate stock status (SB/SBF=0) within the MP, data requirements and monitoring strategies, and provisions for the review and updating of the MP and TTM. Together, elements of the MP define what management actions are to be made in response to changes in the stock or fishery condition, which is then used to progress future TTMs.

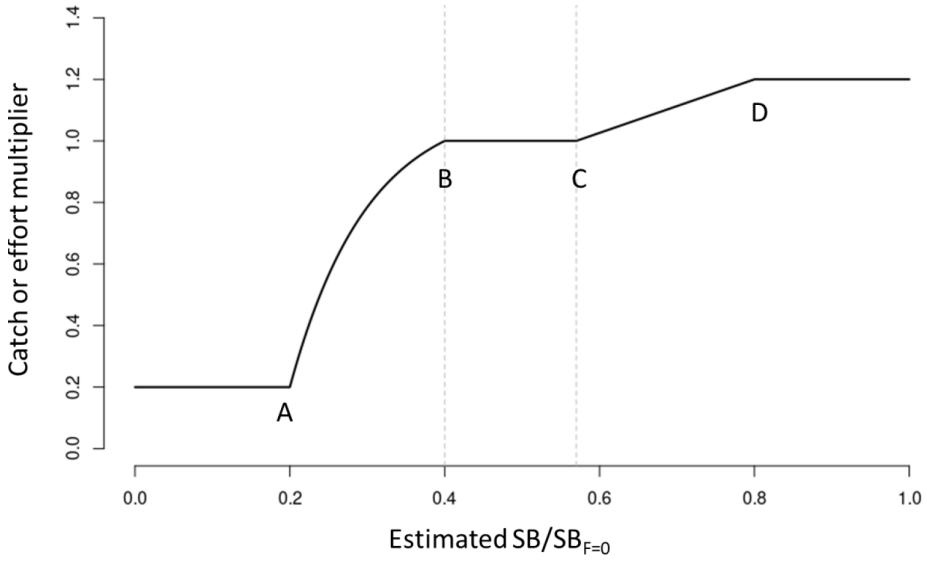


Figure 8. Skipjack tuna harvest control rule (Source: CMM 2022-01).

The WCPO SKJ stock assessment is conducted every three years using Multifan-CL, which provides probabilistic estimates of stock status, parameter values, and standard reference points for fishing mortality and biomass such as MSY and SB_{MSY}. The most recent assessment of WCPO SKJ was conducted in 2022 (Castillo Jordan et al., 2022). The assessment results were summarized as follows:

Current fishing mortality rates for skipjack tuna are estimated to be about 0.32 times the level of fishing mortality associated with maximum sustainable yield (FMSY). Therefore, overfishing is not occurring (i.e., Frecent < FMSY). Median spawning biomass is estimated to be at 51% of the level predicted in the absence of fishing. Recent spawning biomass levels are estimated to be well above the Limit Reference Point (LRP) of 20% of the level predicted in the absence of fishing (SB/SBF=0 > 0.2). Overall, the spawning biomass and recruitment have shown a recent declining trend since peaks in the late 2000s. Fishing mortality continues to increase and remains higher for adults than juveniles. Depletion (SB/SBF=0) continues to trend downwards, although the trend is mostly influenced by the long-term increasing trend in the estimates of unfished spawning biomass (SBF=0) rather than the declining trend in the estimated spawning biomass (SB). The trends in spawning biomass and depletion vary among model regions, with declining trends more prevalent in the equatorial regions. In terms of stock status, the 2022 stock assessment of skipjack tuna for the WCPO, indicated that according to WCPFC reference points the stock is not overfished, nor undergoing overfishing. Under status quo fishing conditions, where catch and effort levels are maintained at the average 2018-2021 levels, the stock is projected to have zero probability of dropping below the LRP." (Hare et al., 2022a).

WCPO SKJ management measures in the TTM have evolved in response to the state of the stock, and can now continue to evolve under a well-defined HCR adopted in the new SKJ MP. Provisions are in place to monitor the performance of the MP with the probabilistic stock assessment to determine whether exceptional circumstances apply, and revision to the MP may be warranted. The HCR and associated processes for review (stock assessment) and implementation (TTM) allow management to be adaptive and continue responding to the state of the stock as individual harvest strategy elements develop further.

2.3.5 Changes Affecting Traceability

No changes affecting traceability were reported. However, the assessment team notes that the client group would like to reiterate that the UoA does not transship at sea.

2.3.6 Changes Affecting Harmonisation of Overlapping Fisheries

No changes affecting harmonization were reported.

2.3.7 Changes in Scope (as per Section 7.4, 7.5.2, or 7.5.3 of MSC FCP v2.3)

No changes in scope were reported.

2.3.8 Total Allowable Catch (TAC) and catch data

There are no total allowable catch (TAC) limits set for bigeye, skipjack, and yellowfin tuna in the WCPFC for purse seine vessels. Instead, fishing effort is regulated through the VDS. The reported catch by species from the UoA vessels for 2022 is shown in Table 4.

Table 6: Total Allowable Catch (TAC) and catch data

TAC / Catch Data - Yellowfin	Year	Amount
TAC	N/A[1]	
UoA share of TAC	N/A	
Total catch by UoC (most recent year)	2022	46,355 mt

TAC / Catch Data - Skipjack	Year	Amount
TAC	N/A	
UoA share of TAC	N/A	
Total catch by UoC (most recent year)	2022	84,775 mt

TAC / Catch Data - Bigeye	Year	Amount
TAC	N/A	
UoA share of TAC	N/A	
Total catch by UoC (most recent year)	2022	334 mt

[1] No TAC in this fishery.

2.4 Changes which impact traceability systems

Table 7: Changes affecting traceability and segregation.

Are there any developments or changes within the fishery that affect traceability and the ability to segregate MSC from non-MSC products?
No

3 Surveillance Audit Results

3.1 Summary overview

3.1.1 Summary of conditions update

Following MSC Toolbox v1.1 D1.2.1, for PI 1.2.1 (SI a & SI b) and PI 1.2.2, with the publication of the announcement for early application of Section SE on April 12th, 2023, for WCPO yellowfin tuna, WCPO skipjack tuna, WCPO bigeye tuna and South Pacific albacore tuna, the following requirements are no longer applicable and are superseded by requirements in Section SE: all requirements within FCP v3.0/v2.3 7.29.15 and 7.29.16/FCP v2.2 7.28.15 and 7.28.16. As such, for this Year 2 surveillance audit, the Audit Team has not sought the views of the client on performance in relation to relevant conditions and has not evaluated progress and performance against relevant conditions. Also, requirements to suspend a fishery certificate if a client has not made adequate progress towards meeting conditions (GCR v2.5 7.4.3 b) are superseded.

Table 8. Summary of conditions

Condition number	Condition	Performance Indicator (PI)	Status	PI original score	PI revised score
1-1	By the second surveillance audit, demonstrate that the harvest strategy for skipjack tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points	1.2.1.a Skipjack	Section SE	**70**	**n/a**
1-2	SI a) By the first surveillance audit, demonstrate that well defined HCRs are in place for skipjack tuna that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY. SI b) By the first surveillance audit, provide evidence that the selection of the harvest control rules for skipjack tuna are robust to the main uncertainties. SI c) By the first surveillance audit, provide evidence that indicates that the tools in use for skipjack tuna are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	1.2.2.a,b,c Skipjack	Section SE	**60**	**n/a**

Condition number	Condition	Performance Indicator (PI)	Status	PI original score	PI revised score
1-3	By the second surveillance audit, demonstrate that the harvest strategy for yellowfin tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points Under advice from MSC (February 2019) in response to a joint CAB variation request, the deadline for closing harvest strategy conditions for all WCPFC tuna fisheries is 2021.	1.2.1.a Yellowfin	Section SE	**70**	**n/a**
1-4	SI a) By the second surveillance audit, demonstrate that well defined HCRs are in place for yellowfin tuna that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY. SI b) By the fourth surveillance audit, provide evidence that the selection of the harvest control rules for yellowfin tuna are robust to the main uncertainties. SI c) By the second surveillance audit, provide evidence that indicates that the tools in use for yellowfin tuna are appropriate and effective in achieving the exploitation levels required under the harvest control rules. Under advice from MSC (February 2019) in response to a joint CAB variation request, the deadline for closing harvest strategy conditions for all WCPFC tuna fisheries is 2021.	1.2.2.a,b,c Yellowfin	Section SE	**60**	**n/a**
2-1	By the fourth surveillance audit, provide evidence that the direct effects of the UoA are highly likely to not hinder recovery of Cetacean species	2.3.1.b Cetaceans	Closed – Year 1 Surveillance	**n/a**	**n/a**
2-2	By the fourth surveillance audit provide at least some evidence that the measures/strategies for whale sharks and cetaceans are being implemented successfully	2.3.2.d Whale sharks and cetaceans	On target	**75**	**n/a**

Condition number	Condition	Performance Indicator (PI)	Status	PI original score	PI revised score
2-3	By the fourth surveillance audit, provide some quantitative information that 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 Cetaceans	2.3.3.a Cetaceans	On target	**75**	**n/a**
2-4	By the fourth surveillance audit provide evidence that the UoA is highly unlikely to reduce the structure and function of the VME habitats to a point where there would be serious or irreversible harm.	2.4.1.b VME (coral reefs)	Closed	**75**	**80**
2-5	By the second surveillance audit, provide at least 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.	2.4.2.d VME (coral reefs)	On target	**75**	**n/a**
2-6	By the third surveillance audit, provide evidence that the information available 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.	2.4.3.b	On target	**75**	**n/a**
2-7	By year four the fishery must provide evidence that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	2.5.1	Closed – Year 1 Surveillance	**75**	**80**
3-1	By the fourth surveillance audit, provide evidence to demonstrate that clear and transparent processes exist at the national management level to regularly seek and accept “relevant information” provided via consultative processes and that any such information is considered in management decision making at national and regional levels.	3.1.2.b (PNG)	On target	**75**	**75**
3-2	By the fourth year, the client shall present evidence that short term objectives, which are consistent with achieving the outcomes expressed by MSC’s Principles 1 and 2, are	3.2.1 (PNG)	Behind target	**75**	**75**

Condition number	Condition	Performance Indicator (PI)	Status	PI original score	PI revised score
	explicit within the fishery-specific management system.				
3-3	SI b) By the fourth surveillance audit, provide evidence that decision-making processes as they relate to the EEZ and AWs respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions. SI d) By the fourth surveillance audit, provide evidence that Information on the fishery's performance and management action, at the national management level, is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	3.2.2.b,d (PNG)	On target	**70**	**70**
1-5 (from bigeye scope ext.)	By the second surveillance audit (Extended to June 2023), demonstrate that the harvest strategy for bigeye tuna is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.	1.2.1.a (Bigeye)	Section SE		
1-6 (from bigeye scope ext.)	By the second surveillance audit (Extended to June 2023) the client must be in a position to demonstrate that the SG80 requirements for bigeye tuna have been met: SI a) well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY. SI b) evidence that the selection of the harvest control rules are robust to address the main uncertainties. SI c) the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules.	1.2.2.a,b,c (Bigeye)	Section SE		

Condition number	Condition	Performance Indicator (PI)	Status	PI original score	PI revised score
2-7 (from PNA scope ext.)	By the first year surveillance audit at reassessment audit following recertification provide evidence of an objective basis for confidence that the strategy for Silky Sharks will work, based on information directly about the UoA and/or the species [silky shark] involved.	2.3.2.c (Silky sharks)	On target	**65**	**n/a**
2-8 (from PNA scope ext.)	By the first year surveillance audit at reassessment audit following recertification provide evidence that: SI c. Objective basis for confidence that the partial strategy/ strategy will work, based on information directly about the UoA and/or the species involved. Sid. The measures/strategies for sea turtles, mobulids and shark species are being implemented successfully.	2.3.2.c,d (sharks, mobulids, sea turtles)	On target	**65**	**n/a**
3-4 (from PNA scope ext.)	By the first surveillance audit following recertification, provide evidence that sanctions to deal with non-compliance exist, are consistently applied and are providing effective deterrence.	3.2.3.b (Philippines)	On target	**70**	**70**
3-5 (from PNA scope ext.)	By the first surveillance audit following recertification, provide evidence to demonstrate that there is no systematic non-compliance by Philippine flagged Distant-Water Fishing vessels especially in those compliance areas documented as non-compliant or priority non-compliant in WCPFC Compliance Monitoring Reports.	3.2.3.d (Philippines)	On target	**70**	**70**
3-6 (2023)	By the first surveillance audit following recertification, provide evidence that 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	3.2.3(a) PNG	NA	**70**	**n/a**
3-7 (2023)	By the first surveillance audit following recertification, provide evidence that sanctions to deal with non-compliance exist,	3.2.3(b) PNG	NA	**70**	**n/a**

Condition number	Condition	Performance Indicator (PI)	Status	PI original score	PI revised score
	are consistently applied and are providing effective deterrence.				

3.1.2 Recommendations

The team has no new recommendations.

3.2 Re-scoring Performance Indicators

The following PIs were re-scored during previous assessments.

PI 2.3.1 – ETP outcome (Condition 2-1; re-scored and closed in Year 1)

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
a	Effects of the UoA on population/stock within national or international limits, where applicable			
	Guidepost	Where national and/or international requirements set limits for ETP species, the effects of the UoA on the population/stock are known and **likely** to be within these limits.	Where national and/or international requirements set limits for ETP species, the **combined effects of the MSC UoAs** on the population/stock are known and **highly likely** to be within these limits.	Where national and/or international requirements set limits for ETP species, there is a **high degree of certainty** that the **combined effects of the MSC UoAs** are within these limits.
	Met?	FADs: Not relevant Free school: Not relevant	FADs: Not relevant Free school: Not relevant	FADs: Not relevant Free school: Not relevant
	Justification	FADs and Free school: There are no national and/or international requirement that set limits for the ETP species that interact with the UoA. This SI is therefore considered to be not relevant		
b	Direct effects			
	Guidepost	Known direct effects of the UoA are likely to not **hinder recovery** of ETP species.	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?	FADs and Free school: Y – All elements	FADs and Free school: ~~N~~ Y– Cetaceans; Y – All other elements	FADs and Free school: ~~Y~~ *N*– Whale shark; Silky shark; Oceanic White Tip Shark; Seabirds. N –Marine turtles Not scored – Cetaceans
	Justification	FADs and Free school: The ETP species considered here are listed in [the tables from the original PCR] and include three species of sharks, four species of turtles, 10 species of cetaceans and one bird species. ~~**Whale shark**~~ ~~A purse seine set that catches a whale shark is technically not a free school set or a FAD set. Their inclusion here for both set types is to conservatively assess the impact of the occasions when whale sharks were encountered after a skipper made a set on what was~~		

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		~~initially thought to be on either a free or FAD associated school of tuna. Sets recorded as being set on a whale shark are not part of the UoA and are not eligible for certification.~~ ~~The results of an assessment of the risk to the Indo-Pacific Ocean whale shark population from interactions with Pacific Ocean purse seine fisheries (Common Oceans (ABNJ) Tuna Project 2018c) were considered by the WCPFC-SC who concluded that there was a low probability that the Indo-Pacific whale shark was at risk from Pacific purse seine fisheries (median probability of less than 8% that current risk levels exceed life-history-based notional reference points Flim and Fcrash) (WCPFC-SC 2018a). This assessment used observer-reported interactions which average 235 per year from 2010 to 2016. Escalle et al. (2018) have also reported zero post-release mortality for whale sharks encircled by and released from purse seines in the Atlantic Ocean.~~ ~~Whale sharks have represented less than 0.1% of the total catch of the UoA and averaged about 20 animals per year. The fate of these is not known but observers reported 94% having been released alive. At these levels of catch and mortality it considered highly likely that the fishery is not hindering the recovery of whale shark populations, should such a recovery be required.~~ ~~This meets the requirements of the SG 60, SG 80 levels and SG 100 levels.~~ ***Whale Shark (SG80)*** *The results of an assessment of the risk to the Indo-Pacific Ocean whale shark population from interactions with Pacific Ocean purse seine fisheries ((Common Oceans (ABNJ) Tuna Project 2018c) were considered by the WCPFC-SC, which concluded that there was a low probability that the Indo-Pacific whale shark was at risk from Pacific purse seine fisheries (median probability of less than 8% that current risk levels exceed life history-based notional reference points F-Lim and F-crash) (WCPFC-SC 2018a). Global-scale genetic studies on Whale Sharks have estimated genetic effective population size of 103,000 – 238,000 (Castro et al. 2007, Schmidt et al. 2009) with an estimated 75% of Whale Sharks inhabiting the Indo-Pacific.* *Based on observer data considered representative of the UoA, the average annual catch is approximately 80 individuals, with almost all (93%) released alive. Assuming a population size of 77,250 (75% of 103,000 individuals in the Indo-Pacific), we estimate that less than 0.1% of the Indo-Pacific population is attributed to UoA vessels each year. Given this level of impact by UoA vessels, the assessment team considers the direct effects of the UoA are likely to not hinder recovery of this species.* ***SG60 is considered met.*** *Although there are no direct estimates of post release mortality it is estimated to be approximately 10% (with a significant tail in its probability extending to higher values) based on an expert survey (Neuibauer et al., 2018). At the levels of catch noted above and post release mortality of 10%, it considered highly likely that the fishery is not hindering the recovery of Whale Shark populations, should such a recovery be required. This* ***meets the requirements of SG80****.* *The assessment team notes that, compared with the original UoA, Whale Shark interactions by the proposed additional vessels are greater by an order of magnitude (0.02% vs. 0.2%, respectively). As stated above, while it is highly likely that the fishery is not hindering the recovery of Whale Shark populations, this greater amount of Whale Shark encounters, as well as lingering uncertainty about post release mortality (see GSA3.4.3), it cannot be stated*

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		*with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Whale Sharks. The requirements for **SG100 are not met**.* **Silky shark** ~~Following the most recent stock assessment of silky shark for the WCPP-only (Common Oceans (ABNJ) Tuna Project 2018b) the WCPFC-SC concluded that silky sharks were subject to overfishing in the WCPO but were likely not to be in an overfished state (WCPFC-SC 2018a). Therefore, rebuilding of silky sharks is not required.~~ ~~Estimates of the quantities of silky shark taken by different gear types consistently indicate that longlines are responsible for the majority of the catch of silky sharks (Peatman 2017 and 2018 as reported in Clarke 2018). Clarke (2018) estimated the annual catch of silky sharks from the WCPO to exceed 700,000 animals, so the UoA catch represents less than 1% of this total mortality. The catch reported by observers on UoA vessels is about 2-3 animals per set of which at least 20% were released alive. There is likely to be an unobserved level of mortality, however, of silky shark that are entangled in FADs and in the Indian Ocean this was estimated to be up to 10 times the observed mortality (Filmater et al. 2013). Nevertheless, even if such a multiplier was applied to the observed UoA catch, and with a conservative assumption of no post-release survival, the level of mortality attributable to the UoA would still represent a small proportion of the total fishing mortality. Furthermore, the indicators relative abundance used in the stock assessment of Silky Shark would reflect the impact of all mortality, whether observed or not, so its findings about the species being likely to not be overfished are undermined by a level of cryptic mortality from FADs.~~ ~~Retention of silky sharks is prohibited and all landings are monitored. The catch of the target species by UoA vessels is a very low-level percentage of the total WCPFC Convention Area and there is 100% observer coverage. These factors provide a high degree of confidence that there are no significant detrimental effects of fishing by UoA vessels on silky sharks.~~ ~~This meets the requirements of the SG 60, SG 80 and SG 100 levels.~~ ***Silky Shark (SG80)*** *Following the most recent stock assessment of Silky Shark for the WCPO only (Common Oceans (ABNJ) Tuna Project 2018b), the WCPFC-SC concluded that Silky Sharks were subject to overfishing (fishing mortality is 1.6 times the MSY fishing mortality) in the WCPO but were likely not to be in an overfished state (Pr (SB2016 > SBMSY) = 72%) (WCPFC-SC 2018a). Therefore, rebuilding of Silky Sharks is not currently required in the WCPO. According to purse seine bycatch estimates in the WCPO (WCPFC-SC17-2021), the average annual observed interactions for purse seine vessels in the WCPFC Convention Area was 69,430 animals per year between 2015-2020. Observer data provided for the UoA over the same period showed an average annual catch of Silky Sharks by UoA vessels is estimated at 23,435 individuals, with 26% of those animals released alive. Clarke et al. (2018) estimated the annual catch of Silky Sharks in the WCPO at 38,000 MT, with approximately 21% of the catches attributed to purse seine fisheries. Based on observer data considered representative of the UoA (representing approximately 54% of the UoA), and using the conservative assumption of 100% mortality, we estimate the annual UoA fishing mortality of roughly 850 MT to be well-below (less than 2%) the 38,000 MT estimated for the WCPO. This provides some assurance that the direct effects of the UoA are likely to not hinder recovery of this species. **SG60 is considered met.*** PNG Fishing Industry Association's purse seine skipjack, yellowfin, and bigeye tuna fishery Yr 2 Surveillance MSC Reporting Template v2.2 | SCS Version 2-0 (July 2023) | © SCS Global Services Page **39** of **214**

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		Both observed and unobserved discard mortality has been estimated to be high for this species. There is a risk of unobserved mortality of Silky Sharks due to entanglement with FAD netting, as this species is known to associate with floating objects. CMM 2018-01 (and updated versions of this CMM) mandated the deployment of lower entanglement risk FADs, with the design elements of these FADs intended to reduce the risk of entanglement events. However, there is currently not sufficient evidence that this mandate effectively reduced purse seine vessel impacts on species such as Silky Sharks. With the updated CMM 2021-01, use of non-entangling FADs must be implemented across all vessels in the WCPFC by January 2024. Filmalter et al. (2013) estimated that Silky Sharks entangled in FADs in the Indian Ocean were associated with up to 10 times the observed mortality. There are important limitations in the design and sample size of this study and its conclusions cannot be easily applied to the Western Pacific. Nonetheless, even when including both observed and unobserved mortality, the level of mortality attributable to the UoA would still represent a small proportion of the total fishing mortality. Moreover, indicators of relative abundance used in the stock assessment of Silky Shark reflect the impact of all mortality, including from entanglement in FADs. Thus, conclusions that the species is likely not overfished incorporate these sources of mortality and support the assessment team's conclusion that the direct effects of the UoA are highly likely to not hinder the recovery of this species. ***SG80 is met.*** *Without more comprehensive information on post release survival and entanglement data the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on ETP species. The* ***SG100 is not met.*** ~~**Oceanic whitetip shark**~~ ~~The stock assessment of oceanic whitetip shark (Rice and Harley 2012a) concluded that oceanic whitetips have been overfished and remain subject to overfishing. The catch reported by observers on UoA vessels is about 18 animals per year of which at least 30% were released alive (compared to catches of over 40,000 animals per year by longlines – Peatman et al. 2018). There is likely to be an unobserved level of mortality, however, of oceanic whitetip shark that are entangled in FADs and for Silky Shark in the Indian Ocean this was estimated to be up to 10 times the observed mortality (Filmater et al. 2013). Nevertheless, even if such a multiplier was applied to the observed UoA catch of Oceanic Whitetip Sharks, and with a conservative assumption of no post-release survival, the level of mortality attributable to the UoA would still represent a small proportion of the total fishing mortality.~~ ~~Retention of oceanic whitetip shark is prohibited, and all landings are monitored. Post-release survival of released oceanic whitetip sharks is unknown but the condition on release from longlines suggest more die than survive (Peatman et al. 2018). The very low-level percentage of the total WCPFC Convention Area catch of the target species by UoA vessels, the broad distribution of the species and the 100% observer coverage provide a high degree of confidence that there are no significant detrimental effects of fishing by UoA vessels on silky sharks.~~ ~~This meets the requirements of the SG 60, SG 80 and SG 100 levels~~. ***Oceanic Whitetip Shark (SG80)*** *The stock assessment of Oceanic Whitetip Shark (SC15 2019) concluded that overfishing is occurring, and the stock is in an overfished state relative to commonly used MSY and depletion-based reference points (noting that depletion-based reference points have only been adopted for tunas). This conclusion is robust to uncertainties in key model assumptions.*

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		SC15 noted that while the assessment estimates that overfishing is still occurring (F_{recent}/F_{MSY} was 3.94) the stock assessment also estimates a slight recovery in stock biomass in recent years (2013-2016). Due to the overfished/overfishing status of Oceanic Whitetip Sharks, rebuilding is currently required in the WCPO and it remains unclear whether the stock status will continue to improve or perhaps decline in the future. *Based on observer data considered representative of the UoA, the average annual catch was 22 individuals, with approximately 33% released alive. The low number of interactions with Oceanic Whitetip Sharks by UoA vessels provides some assurance that the direct effects of the UoA are likely to not hinder recovery of this species.* ***SG60 is considered met.*** *The majority of Oceanic Whitetip Shark interactions are from longline fisheries, which accounted for an annual average of 36,825 interactions with this species in the WCPO between 2015-2018 (WCPFC-SC16-2020). Thus, with the relatively low proportion of interactions attributed to UoA vessels (0.1% of those from the longline fleets in the WCPO), the assessment team concludes that the direct effects of the UoA are highly likely to not hinder recovery of this species.* ***SG80 is met****.* *There is an unobserved level of post release mortality, as well as mortality occurring due to entanglement in FADs (see description in section above for Silky Sharks). With Oceanic Whitetip Sharks currently overfished, and because of uncertainty about post release and entanglement mortality (see GSA3.4.3), the assessment team cannot assert that the UoA is highly likely to not hinder the recovery of Oceanic Whitetip Sharks, the team agrees that* ***SG100 is not met.*** **Cetaceans** ~~Interactions with all species of cetaceans (See Table 12) is common for the UoA, with an interaction every 4 or 5 sets, but more commonly on FAD sets. Observers reported that 87% of these were released alive, so there were about 57 mortalities per year reported across the 21 species recorded. Even higher immediate survival rates have been reported for cetaceans released from purse seines in the Atlantic (92%) and Indian (100%) oceans (Escalle et al. 2015).The species most affected by the UoA is the false killer whale (*Pseudorca crassidens)* (Table 12). This species is classified as Near Threatened by the IUCN with bycatch from fisheries one of the primary threats (Baird 2018). Bycatch is greatest in longline and other hook-and-line fisheries but, as found for this UoA, some mortality also occurs in gillnet and seine fisheries. The species is also considered to be one of the less common delphinids and is not common anywhere. Furthermore, based on genetics it is believed that subpopulation structure likely exists throughout their range. This combination of factors means that, even though the numbers involved for the UoA are relatively small and so unlikely to not hinder any recovery at the local population level, should that be required, there is insufficient evidence to conclude that this impact is highly likely. This meets the requirements of the SG 60 level but not of the SG 80 level.~~ ~~At these levels of catch and mortality it is considered highly likely that the fishery is not hindering the recovery of any cetacean populations, should such a recovery be required. In the absence of better information on the status of cetaceans, however, we could not place a higher degree of confidence in this conclusion. This meets the requirements of the SG 60 and SG 80 levels but not of the SG 100 level.~~ **Cetaceans**

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		Based on the observer data provided for approximately half of the vessels under assessment, 1,846 cetaceans from 25 species were captured, with high variability in survivorship across species ranging from 0-100% of individuals recorded by observers as 'discarded alive' (fate code DPA). No post-release mortality information is available; thus, survival designations made by observers are likely underestimates of full mortality. Of the cetacean interactions, most were reported as bait-feeding sets (39%), with the remainder recorded as live whale sets (24%), other set types (13%), log sets (9%), FAD sets (8%), or free school sets (7%). *There is a risk to marine mammals from ghost fishing or entanglement in FADs. However, reviews of interactions between cetaceans and tuna fisheries indicate that most cetaceans do not regularly associate with FADs (Anderson, 2014), observer data from the UoA confirms that the majority of cetacean interactions are not in FAD sets. There are few isolated records of cetacean entanglement potentially attributed to FADs, and the scale of this source of mortality on marine mammals is considered small (Anderson, 2014). Furthermore, potential threats from ghost fishing and entanglement are being mitigated as vessels operating in the WCPO are deploying the low-entanglement FADs as specified under CMM 2021-01. Given the low risk of entanglement with FADs for marine mammals, unobserved mortality from FAD entanglement is considered highly likely to not hinder the recovery of marine mammals. Subsequent species-level evaluations focus on observed mortality or potential post-capture impacts.* ***Rough-toothed Dolphin (SG80)*** *Rough-toothed Dolphins inhabit oceanic tropical and warm temperate waters in all three major oceans, mostly between 40°N and 35°S. Abundance estimates for Rough-toothed Dolphins are available for only a relatively small proportion of their range. An estimated 145,900 (coefficient of variation (CV) = 0.32) inhabit the eastern tropical Pacific based on shipboard line-transect surveys undertaken from 1986 to 1990 (Wade and Gerrodette 1993). In the Hawaiian Island Exclusive Economic Zone (EEZ), a shipboard line-transect survey conducted in 2010 resulted in an abundance estimate of 72,528 (CV = 0.39) Rough-toothed Dolphins (Bradford et al. 2017).* *Based on observer data considered representative of the UoA, Rough-toothed Dolphin interactions with UoA vessels in the WCPO were primarily associated with log sets (52%) and bait-feeding sets (30%), with an average of 5 animals caught per year, and approximately 61% of those released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 983 Rough-toothed Dolphins (Williams et al., 2020). At the level of reported interactions for UoA vessels, and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) that result in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Rough-toothed Dolphins in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Rough-toothed Dolphins.* ***SG100 is not met.*** ***Bottlenose Dolphin (SG80)*** *Bottlenose Dolphins occur worldwide through tropical and temperate inshore, coastal, shelf, and oceanic waters (Leatherwood and Reeves 1990, Wells and Scott 1999, Reynolds et al. 2000). Abundance of Common Bottlenose Dolphins has been estimated for several parts of*

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		the species' range. Summing available estimates, a minimum world-wide abundance estimate would be 750,000, acknowledging that most of the range of the species has not been surveyed for abundance estimation, and some of the estimates included in the summation are out of date. Surveys of the Eastern Tropical Pacific resulted in an estimate of 243,500 (CV = 0.29) (Wade and Gerrodette 1993), but this estimate should be considered with caution as it is more than 25 years old. *Based on observer data considered representative of the UoA, Bottlenose Dolphin interactions with UoA vessels in the WCPO were primarily associated with bait-feeding sets (45% of interactions), with an average of 47 animals caught per year, and approximately 70% of those released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 643 Bottlenose Dolphins (Williams et al., 2020). At the level of reported interactions for UoA vessels, and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) that result in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Bottlenose Dolphins in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Bottlenose Dolphins.* ***SG100 is not met.*** ***Indo-Pacific Bottlenose Dolphin (SG80)*** *Indo-Pacific Bottlenose Dolphins have a discontinuous distribution in warm-temperate and tropical waters of the Indo-Pacific region. They are found primarily in shallow coastal and estuarine waters and in shallow reef complexes (Jefferson et al. 2015). It is difficult to assign a conservation status to either common or Indo-Pacific bottlenose dolphins on a global or range-wide basis. Indo-Pacific bottlenose dolphins are particularly difficult to assess, because they tend to occur in fragmented coastal populations, and their range includes many countries where little or no formal research has taken place.* *Based on observer data considered representative of the UoA, Indo-Pacific Bottlenose Dolphin interactions with UoA vessels in the WCPO were primarily associated with FAD sets (46% of interactions), with an average of 15 animals caught per year, and approximately 57% of those released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 239 Indo-Pacific Bottlenose Dolphins (Williams et al., 2020). At the level of reported interactions for UoA vessels, and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) that result in more than half of the animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Indo-Pacific Bottlenose Dolphins in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, the species appears to be composed of small local isolated populations, additional information on local populations impacted by the fishery are needed. Given the information gaps, a more precautionary approach is applied, and the team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Indo-Pacific Bottlenose Dolphins.* ***SG100 is not met.*** ***Spinner Dolphin (SG80)***

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		Spinner Dolphins occur throughout tropical and subtropical waters in both hemispheres from approximately 40°N to 40°S. They inhabit the Pacific, Atlantic, and Indian Oceans, including the Persian Gulf and the Red Sea, and is the most common small cetacean in tropical pelagic waters (Perrin 2018). There is no global abundance estimate for this widely distributed species and available abundance estimates add up to more than a million dolphins. However, the vast majority of the species range remains unsurveyed, therefore the actual abundance is presumed to be considerably greater. There were an estimated 801,000 (coefficient of variation (CV)=37%) white-bellied Spinner Dolphins (S. l. orientalis – S. l. longirostris intergrades) in the EPO in 2000 (Gerrodette et al. 2005) and in the EPO the population of eastern Spinner Dolphins was estimated at 613,000 (CV=22%) in 2003 (Gerrodette and Forcada 2005). Despite large reductions in bycatch mortality since the 1970s, this population appeared to be recovering at an estimated rate of only 1.1% per year during the early 2000s. *Based on observer data considered representative of the UoA, Spinner Dolphin interactions with UoA vessels in the WCPO were primarily associated with bait-feeding sets (48% of interactions), with an average of 29 animals caught per year, and approximately 75% of those released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 448 Spinner Dolphins (Williams et al., 2020). At the level of reported interactions for UoA vessels, and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) that result in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Spinner Dolphins in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Spinner Dolphins.* ***SG100 is not met.*** ***Common Dolphin (SG80)*** There are an estimated 1.4 million Common Dolphins in the Western Pacific off Japan (Kanaji et al. 2017). Ship survey data from 2009 resulted in an estimated total of 279,000 dolphins of the Delphinus delphis bairdii subspecies along the west coast of Baja California and the California coast (Carretta et al. 2011). A total of just over 12,000 Common Dolphins (Delphinus delphis delphis) was estimated in the EEZ of Colombia based on surveys conducted between 1986 and 2008 (Gerrodette and Palacios 1996). Note that in 2016, there was a change in taxonomy of the Delphinus genus and Long-beaked Common Dolphin (Delphinus capensis), formerly listed as Data Deficient on the Red List, is no longer recognized as a separate species. All Common Dolphins are now classified as Delphinus delphis and have most recently been assessed for The IUCN Red List of Threatened Species in 2020 and listed as Least Concern. Population trend is unknown. *Based on observer data considered representative of the UoA, Common Dolphin interactions with UoA vessels in the WCPO were primarily associated with bait-feeding sets (45% of interactions), with an average of 10 animals caught per year, and approximately 83% of those released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the*

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		WCPFC Convention Area interacted with 167 Common Dolphins (including Long-beaked Common Dolphin) (Williams et al., 2020). At the level of reported interactions for UoA vessels, and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) that result in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Common Dolphins in the WCPO. ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Common Dolphins.* ***SG100 is not met.*** ***Risso's Dolphin (SG80)*** *Based on observer data considered representative of the UoA, Risso's Dolphin interactions with UoA vessels in the WCPO were primarily associated with bait-feeding sets (77%) and unassociated sets (17%), with an average of 17 animals caught per year, and approximately 92% of those released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 152 Risso's Dolphins (Williams et al., 2020). At the level of reported interactions for UoA vessels, and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) that result in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Risso's Dolphins in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Risso's Dolphins.* ***SG100 is not met.*** ***Fraser's Dolphin (SG80)*** *Based on observer data considered representative of the UoA, Fraser's Dolphin interactions with UoA vessels in the WCPO were relatively rare, with only a single individual caught in 2017 associated with bait-feeding sets and released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 5 Fraser's Dolphins (Williams et al., 2020). At the level of reported interactions for UoA vessels, and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) that result in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Fraser's Dolphins in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a*

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		high degree of confidence that there are no significant detrimental direct effects of the UoA on Fraser's Dolphins. ***SG100 is not met.*** ***Striped Dolphin (SG80)*** *Based on observer data considered representative of the UoA, Striped Dolphin interactions with UoA vessels in the WCPO were relatively rare, with only five individuals caught in 2017 more than half of these caught in unassociated sets and released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 99 Striped Dolphins (Williams et al., 2020). At the level of reported interactions for UoA vessels, and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) that result in more than half of the animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Striped Dolphins in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Striped Dolphins.* ***SG100 is not met.*** ***Pan-tropical Spotted Dolphin (SG80)*** *The Pantropical Spotted Dolphin is one of the most abundant cetaceans in tropical and subtropical waters around the globe. Estimates are unavailable for most of the species range, particularly in the eastern Atlantic, Indian Ocean, and large portions of the tropical Pacific and therefore total abundance is likely much higher. The abundance of Pan-tropical Spotted Dolphins is unknown in much of the central and western Pacific. Although it is data-poor in much of its range, given its generally high abundance and pantropical distribution, and in the absence of evidence that threats are significant throughout the species' extensive range, Pan-tropical Spotted Dolphins have most recently been assessed for The IUCN Red List of Threatened Species in 2018 and listed as Least Concern. Population trend is unknown.* *Based on observer data considered representative of the UoA, Pan-tropical Spotted Dolphin interactions with UoA vessels in the WCPO were associated with unassociated sets (29%) and "other" set types (77%), with an average of 8 animals caught per year, and approximately 33% of those released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 97 Pan-tropical Spotted Dolphins (Williams et al., 2020). At the level of reported interactions for UoA vessels, and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03), there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Pan-tropical Spotted Dolphins in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a*

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		high degree of confidence that there are no significant detrimental direct effects of the UoA on Pan-tropical Spotted Dolphins. ***SG100 is not met.*** ***Ginkgo-toothed Beaked Whale (SG80)*** *Very little is known about the biology of Ginkgo-toothed Beaked Whales. They are found in the tropical and warm-temperate waters of the western Pacific and are thought to occur primarily in deep, offshore waters. Nearly nothing is known about their food habits. Two individuals that stranded in Japan had squid remains (i.e., whole body, beaks and lenses) in their stomachs; fish remains (otolith, bones) were also found in one of them (Yamada et al. 2012). There is no information on abundance or trends in abundance for this species in the Pacific Ocean and the species is classified as Data Deficient (DD) on the IUCN Red List.* *Based on observer data considered representative of the UoA, Ginkgo-toothed Beaked Whale interactions with UoA vessels in the WCPO were associated with live whale sets (71%) and unassociated sets (29%), with an average of 1 animal caught per year, and all reportedly released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 15 Ginkgo-toothed Beaked Whales (Williams et al., 2020). Although abundance estimates for this species are lacking, given the minimal encounters by UoA vessels, and the measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03), resulting in a very high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Ginkgo-toothed Beaked Whales in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Ginkgo-toothed Beaked Whales.* ***SG100 is not met.*** ***Cuvier's Beaked Whale (SG80)*** *Cuvier's Beaked Whales are undoubtedly among the most common and abundant of all the beaked whales, and worldwide abundance is likely to be well over 100,000. There is no information on trends in abundance for any population. Determining abundance of Cuvier's Beaked Whales is difficult for several reasons: 1) they are widely distributed in offshore waters of most of the world's oceans; 2) in areas where multiple species of beaked whales occur some sightings cannot be identified to species; 3) they regularly make long, deep dives and animals may be below the surface and not detected during surveys; and 4) the body size is relatively small and group size is often small making detection in rough offshore waters difficult even if the animals are at the surface. Global abundance of this species is unknown but there are estimates of numbers in some areas. Cuvier's Beaked Whale has most recently been assessed for The IUCN Red List of Threatened Species in 2018 and is listed as Least Concern.* *Based on observer data considered representative of the UoA, Cuvier's Beaked Whale interactions with UoA vessels in the WCPO were rare, with a single animal caught in association with a live whale set and released dead. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and*

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		2019, purse seine fisheries in the WCPFC Convention Area interacted with 46 Cuvier's Beaked Whales (Williams et al., 2020). Based on observer data representing roughly half of the entire UoA, the assessment team estimates that none of the animals caught between 2015-2019 were attributed to the UoA vessels. Given the minimal encounters by UoA vessels, and the measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03), the UoA represents a minimal of the risk posed to Cuvier's Beaked Whale populations and there is a high degree of confidence that the UoA is highly likely to not hinder recovery of Cuvier's Beaked Whale populations in the WCPO. On this basis ***SG60 and SG80 are met****.* *Despite the relatively low number of interactions, the species appears to be composed of small local isolated populations, additional information on local populations impacted by the fishery are needed. Given the information gaps, a more precautionary approach is applied, and the team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Cuvier's Beaked Whales.* ***SG100 is not met.*** ***Short-finned Pilot Whale (SG80)*** *Short-finned Pilot Whales are found in warm temperate to tropical waters, generally in deep offshore areas. In the western Pacific, population estimates range from 4,321-53,608. Line-transect surveys in Japanese waters generating an abundance estimate of 53,609 (coefficient of variation (CV) 0.22) for the southern form and an estimate of 4,321 (CV 0.61) for the northern form (Miyashita 1993). Dolar et al. (2006) estimated their abundance in the Philippines at 7,571. A line transect survey in the EPO in 2000 estimated abundance at 589,000 (CV 0.26), with a steadily increasing trend during the eight surveys that were conducted between 1986 and 2000. Surveys off the Hawaiian Islands in 2010 yielded an abundance estimate of 19,503 (CV 0.49) (Bradford et al. 2017) and 836 (CV 0.79) in 2016 off the west coast of the USA (Barlow 2016).* *Based on observer data considered representative of the UoA, Short-finned Pilot Whale interactions with UoA vessels in the WCPO were primarily associated with log and FAD sets (38% and 18%, respectively) with an estimated average of 13 animals caught per year, and approximately 94% of those released alive. Making the conservative assumption of a population size of 4,321 animals for the WCPO, the UoA vessels interact with approximately 0.3% of the WCPO population each year. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 102 Short-finned Pilot Whales (Williams et al., 2020). At the level of reported interactions reported by UoA vessels and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) resulting in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Short-finned Pilot Whales in the WCPO.* ***SG60 and SG80 are met.*** *In the absence of better data on total mortalities, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on this species.* ***SG100 is not met.*** ***False Killer Whale (SG80)***

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		False Killer Whales are found in tropical to warm temperate zones, generally in relatively deep, offshore waters in all three major oceans and densities are much higher in tropical regions. Due to their predominantly offshore distribution False Killer Whales are difficult to study and not many regional populations have been assessed. In the western North Pacific abundance was estimated at 16,668 (CV 0.26) based on line transect surveys from 1983-1991 (Miyashita 1993). There is serious concern, about the false killer whale population around the main Hawaiian Islands, which was thought to number between 150 and 200 individuals in 2012, demonstrating a decline since 1989. False Killer Whale has most recently been assessed for The IUCN Red List of Threatened Species in 2018 and is listed as Near Threatened under criteria A2d. *Based on observer data considered representative of the UoA, False Killer Whale interactions with UoA vessels in the WCPO were primarily associated with bait-feeding sets, with an estimated average of 117 animals caught per year, and approximately 80% of those released alive. Assuming a population size of 16,668 animals for the WCPO, the UoA interacts with at least 0.7% of the WCPO population each year. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that between 2015 and 2019 purse seine fisheries in the WCPFC Convention Area interacted with 4,226 False Killer Whales (Williams et al., 2020). At the level of reported interactions by the UoA and considering there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) resulting in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of False Killer Whale populations in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on this species.* ***SG100 is not met.*** ***Killer whale (SG80)*** *Killer whales are widely distributed and may be the second-most widely ranging mammal species on the planet, after humans (Rice 1998). Killer Whales may occur in virtually any marine habitat but are most common in cold-water areas of high marine productivity, particularly at higher latitudes and near shore and tend to occur near continental margins (Dahlheim and Heyning 1999, Forney and Wade 2006). Their populations have been relatively well-studied in the North Pacific (Reeves et al., 2017). According to Forney and Wade (2006), although the available data are far from complete, abundance estimates for sampled areas provided a minimum worldwide abundance estimate of about 50,000 Killer Whales of all types. Those authors noted that the total was likely higher, because estimates were not available for many high-latitude areas of the northern hemisphere and for large areas of the South Pacific, South Atlantic, and Indian Ocean.* *Based on observer data considered representative of the UoA, Killer Whale interactions with UoA vessels in the WCPO were rare, with a single animal caught in 2019 and released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 18 Killer Whales (Williams et al., 2020). Although abundance estimates for this species are lacking for the WCPO, given the minimal encounters by UoA vessels and*

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		the measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03), resulting in a very high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Killer Whales in the WCPO. ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Killer Whales.* ***SG100 is not met.*** ***Pygmy Killer Whale (SG80)*** *Pygmy Killer Whales have a wide distribution in tropical and subtropical waters worldwide. They are sighted regularly off Hawaii and Japan. The only population estimate currently available for the species is 38,900 individuals in the eastern tropical Pacific Ocean; however, this estimate had a large coefficient of variation meaning the true population size could be much lower or much higher (Wade and Gerrodette 1993).* *Based on observer data considered representative of the UoA, Pygmy Killer Whale interactions with UoA vessels in the WCPO were primarily associated with log sets (52%) and bait-feeding sets (30%), with an estimated average of 4 animals caught per year, and all of those reportedly released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 102 Pygmy Killer Whales (Williams et al., 2020). Although abundance estimates for this species are lacking, given the minimal encounters by UoA vessels, and the measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03), resulting in a very high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Pygmy Killer Whales in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Pygmy Killer Whales.* ***SG100 is not met.*** ***Pygmy Sperm Whale (SG80)*** *The Pygmy Sperm Whale has a broad distribution throughout tropical, subtropical, and temperate waters throughout the world. The species is considered data deficient and there is currently no information on population abundance. Pygmy sperm whales can live up to 23 years, reaching sexual maturity when they are 4 – 5 years old. The mating and calving season lasts about 9 months and peaks in March through August in the Northern Hemisphere. Pregnancy lasts for about 9 to 11 months, and females can give birth multiple years in a row. Calves are weaned after 1 year. https://mbr.biomedcentral.com/articles/10.1186/s41200-016-0064-z* *Based on observer data considered representative of the UoA, Pygmy Sperm Whale interactions with UoA vessels in the WCPO were associated with live whale sets (100% of*

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		Pygmy Sperm Whale interactions were in live whale sets), with an average of 2 animals caught per year, and all reportedly released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 45 Pygmy Sperm Whales (Williams et al., 2020). Although abundance estimates for this species are lacking for the WCPO, given the minimal encounters by UoA vessels and the measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03), resulting in a very high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Pygmy Sperm Whales in the WCPO. ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Pygmy Sperm Whales.* ***SG100 is not met.*** ***Dwarf Sperm Whale (SG80)*** *Although the range of Dwarf Sperm Whales is poorly understood, they occur in oceanic waters of the warm temperate and tropical Atlantic, Indian and Pacific Oceans, from approximately 45°S to 45°N. The paucity of live sighting records is due at least partly to their inconspicuous behaviour rather than rarity. Dwarf sperm whales usually avoid vessels and planes, the tools that our scientists use to measure population size. Additionally, due to their cryptic nature, it is difficult to see these whales when they surface to breathe unless sea and weather conditions are very calm. As a result, scientists rarely see dwarf sperm whales at sea. This makes it difficult to estimate their minimum population size or current population trends. Dwarf Sperm Whales seem to be more abundant in tropical and subtropical waters. The Dwarf Sperm Whale has most recently been assessed for The IUCN Red List of Threatened Species in 2020 and is listed as Least Concern. Population trends for this species are unknown.* *Based on observer data considered representative of the UoA, Dwarf Sperm Whale interactions with UoA vessels in the WCPO were rare, with two animals caught in association with a live whale set and both released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 9 Dwarf Sperm Whales (Williams et al., 2020). Although abundance estimates for this species are lacking for the WCPO, given the minimal encounters by UoA vessels and the measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03), resulting in a very high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Dwarf Sperm Whales in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Dwarf Sperm Whales.* ***SG100 is not met.*** ***Melon-headed Whale (SG80)***

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		Abundance estimates for this species are patchy, with wide ranging estimates for regions across the Pacific. In the eastern Sulu Sea and in the Tañon Strait in the Philippines, 921 (CV=83%) and 1,383 (CV=82%) individuals, respectively, were estimated from line transect surveys conducted in 1994 and 1995 (Dolar et al. 2006). Melon-headed Whales can be relatively common in some areas of their range, for example where deep water approaches islands, such as around some archipelagos in the western tropical Pacific (e.g. Marquesas Islands) (Gannier 2000; 2002). Melon-headed Whale has most recently been assessed for The IUCN Red List of Threatened Species in 2019 and is listed as Least Concern. *Based on observer data considered representative of the UoA, Melon-headed Whale interactions with UoA vessels in the WCPO were relatively rare, with an average of 3 interactions per year, primarily associated with bait-feeding sets, and all released alive. A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that, between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 81 Melon-headed Whales (Williams et al., 2020). At the level of reported interactions for UoA vessels, and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) that result in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Melon-headed Whales in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on Melon-headed Whales.* ***SG100 is not met.*** ***Bryde's Whale (SG80)*** *Bryde's Whales occur across the western and central North Pacific, mainly north of 20°N in summer and south of 20°N in winter. They also occur throughout the rest of the tropical Pacific, and across the South Pacific southward to about 35°S (Miyashita et al. 1996). In the southwestern Pacific, their distribution extends as far south as New Zealand. In the western and central North Pacific (west of 165°W) abundance is estimated at 26,300 (coefficient of variation (CV) = 18.5%) based on summer surveys during 1988-2016 (Hakamada et al. 2017) and 137 for the East China Sea stock (IWC 1996).* *A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that between 2015 and 2019 purse seine fisheries in the WCPFC Convention Area interacted with 400 Bryde's Whales (Williams et al., 2020). Based on observer data considered representative of the UoA, Bryde's Whale interactions with UoA vessels in the WCPO were primarily associated with live whale sets (70% of Bryde's Whale interactions were in live whale sets), with an average of 22 animals caught per year, and approximately 98% of those released alive. Assuming a population size of 26,300 animals for the WCPO, the UoA vessels interact with approximately 0.08% of the WCPO population each year. At this level of reported interaction and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) resulting in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Bryde's Whale populations in the WCPO.* ***SG60 and SG80 are met.***

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		In the absence of better data on total mortalities, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on this species. ***SG100 is not met.*** ***Fin Whale (SG80)*** *Fin Whales occur worldwide, mainly in offshore waters of the temperate and subpolar zones and are considered rare or absent in most tropics regions (Edwards et al. 2015). Fin Whale global population estimates range from less than 100,000 to roughly 119,000. While distinct populations exist, data is limited to estimate the present status of region Fin Whale populations. Based on an assessment to classify Fin Whales under ICUN, the North Pacific population was estimated at 50,000 animals in 2011 and the population trend is considered to be increasing (https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T2478A50349982.en).* *A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 32 Fin Whales, (Williams et al., 2020). Based on observer data considered representative of the UoA, Fin Whale interactions with UoA vessels in the WCPO were primarily associated with live whale sets (67% of Fin Whale interactions were in live whale sets), with 3 animals caught in 2018, and all reportedly released alive. Assuming a population size of 50,000 animals, the UoA vessels interact with at least 0.006% of the Fin Whale population each year. At this level of reported interaction and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) resulting in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Fin Whale in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on this species.* ***SG100 is not met.*** ***Sei Whale (SG80)*** *The Sei Whale is a cosmopolitan species, with a mainly offshore distribution. The species occurs in the North Atlantic, North Pacific, and Southern Hemisphere. From sighting surveys conducted under the IWC POWER programme in July and August 2010-2012, Hakamada et al. (2017) estimated 29,632 (CV 0.24) Sei Whales in the North Pacific area east of 170°E. Additionally an estimate of 5,086 (CV 0.38) was obtained from national surveys west of 170°E in the same months in 2008 (Hakamada and Matsuoka 2016). Combining these estimates gives a total population size of about 35,000 Sei Whales and the population is assumed to be increasing at a rate of 2% per year. Based on population assessments, estimates for the aged 1+ population size was 35,000 in 2011 in the North Pacific and 10,000 in 1983 in the Southern Hemisphere (IWC 2017).* *A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 309 Sei Whales, (Williams et al., 2020). Based on observer data considered representative of the UoA, Sei Whale interactions with UoA vessels in the WCPO*

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		were primarily associated with live whale sets (76% of Sei Whale interactions were in live whale sets), with an average of 20 animals caught per year, and approximately 90% of those released alive. Assuming a population size of 35,000 animals for the WCPO, the UoA vessels interact with at least 0.06% of the WCPO population each year. At this level of reported interaction and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) resulting in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Sei Whale in the WCPO. ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on this species.* ***SG100 is not met.*** ***Blue Whale (SG80)*** *The Blue Whale is a cosmopolitan species, found in all oceans but absent from some regional seas. During the summer, Blue Whales occur north of 35°N in the western North Pacific, and north of 40°N in the central North Pacific and Gulf of Alaska. They occur year-round off Baja California, Mexico, and the California coast (Calambokidis and Barlow 2004). Analysis of song types suggest that Blue Whales in the eastern North Pacific are a separate population from those in the central and western North Pacific, but that whales from the eastern population mingle with whales from the western population in the Gulf of Alaska in summer (Monnahan et al. 2014). Blue Whales are present year-round on the Costa Rica Dome, but it is unclear whether any animals are residents. Monnahan et al. (2015) concluded that the eastern North Pacific population had recovered to near its pre-whaling abundance, estimated to be 1,750-2,500 whales. The population seems to have been roughly stable since the early 1990s (Carretta et al. 2017). In the Southern Hemisphere Blue Whales were estimated to number around 2,300 in 1998 and to be increasing between 2.4-8.4% per year (https://iwc.int/estimate). There are currently no estimates of abundance for the putative western Pacific Blue Whale stock.* *A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 22 Blue Whales, (Williams et al., 2020). Based on observer data considered representative of the UoA, Blue Whale interactions with UoA vessels in the WCPO were associated with live whale sets (50%) and bait-feeding sets (50%), with an average of 1 animal caught per year, and approximately 75% of those reportedly released alive. Although abundance estimates for this species are lacking for the WCPO, we assume a population size of 1,750 animals (the eastern North Pacific population). The UoA vessels interact with approximately 0.06% of the WCPO population each year. At this level of reported interaction and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) resulting in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Blue Whales in the WCPO.* ***SG60 and SG80 are met.***

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on this species. ***SG100 is not met.*** ***Humpback Whale (SG80)*** *Although the International Whaling Commission considered North Pacific humpbacks to be one stock, there is now evidence for multiple stocks in the North Pacific that migrate between their respective summer/fall feeding areas and winter/spring calving and mating areas: the eastern North Pacific stock, the central North Pacific stock and the western North Pacific stock (NOAA 2005). There are no reliable estimates for the abundance of humpback whales in the western Pacific stock because surveys of the known feeding areas are incomplete, and not all feeding areas are known, however, recent work has indicated animals in the North Pacific to number 21,808 (CV=0.04). The majority of Humpback Whale populations are recovering; globally, the species was moved from a status of Vulnerable to Least Concern by the IUCN Redlist of Threatened Species.* *A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 29 Humpback Whales, (Williams et al., 2020). Based on observer data considered representative of the UoA, all reported Humpback Whale interactions with UoA vessels in the WCPO were associated with live whale sets, with 15 animals caught in 2016, and all reportedly released alive. Although abundance estimates for this species are lacking for the WCPO, we assume a population size of 21,808 (North Pacific population). The UoA vessels interact with approximately 0.07% of the population each year. At this level of reported interaction and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) resulting in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Humpback Whales in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on this species.* ***SG100 is not met.*** ***Sperm Whale (SG80)*** *Sperm Whales are broadly distributed across the globe, and undergo extensive movements thought to be linked primarily to geographical and temporal variations in the abundance of pelagic squids (Mizroch and Rice 2013). Sperm Whales were historically heavily hunted, and today are globally designated as Vulnerable on the IUCN Red List of Threatened Species. Current and historical abundance estimates of sperm whales in the North Pacific are based on limited data; the species is far-ranging and exhibits sex segregation and stock overlap that together make population size estimation difficult (Muto et al. 2021). Kato and Miyashita (1998) reported 102,112 Sperm Whales (CV = 0.155) in the western North Pacific, with the caveat that their estimate is likely positively biased.*

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 21 Sperm Whales, (Williams et al., 2020). Based on observer data considered representative of the UoA, the majority of reported Sperm Whale interactions with UoA vessels in the WCPO were associated with live whale sets. An average of 1 animal was caught per year between 2015-2019; of these, 60% were reportedly released alive, and the remaining 40% were discarded with unknown condition. Although abundance estimates for this species are lacking for the WCPO, we assume a population size of 102,112 (western North Pacific population). The UoA vessels interact with less than 0.001% of the population each year. At this level of reported interaction and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) resulting in the majority of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Sperm Whales in the WCPO. ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a high degree of confidence that there are no significant detrimental direct effects of the UoA on this species.* ***SG100 is not met.*** ***Minke Whale (SG80)*** *The Common Minke Whale is a cosmopolitan species found in all oceans and in nearly all latitudes, from nearly 70°S to 80°N. The most recent abundance estimate for the western North Pacific (west of 170°E) derived from data collected during 2005-12 and total 27,000 animals (CV 0.16) (Allison et al. 2014). Minke Whale densities in the eastern North Pacific are generally lower than in the western region: 636 (CV 0.72) for the U.S. west coast during 2008-14 (Barlow 2016), 522 (CV 0.30) for the waters of British Columbia during 2004-08 (Best et al. 2015), 2,020 (CV 0.73) for the eastern Bering Sea shelf (Friday et al. 2013), and 1,232 (CV 0.34) for coastal waters of the northern Gulf of Alaska and the eastern and central Aleutian Islands (Zerbini et al. 2006). No estimates are available for the South Pacific Ocean.* *A recent compilation of available information on cetacean interactions in WCPFC purse fisheries noted that between 2015 and 2019, purse seine fisheries in the WCPFC Convention Area interacted with 63 Minke Whales, (Williams et al., 2020). Based on observer data considered representative of the UoA, Minke Whale interactions with UoA vessels in the WCPO were primarily associated with live whale sets (78% of), with an average of 5 animals caught per year, and 96% reportedly released alive. Assuming a population size of 27,000 animals, the UoA vessels interact with approximately 0.03% of the Minke Whale population each year. At this level of reported interaction and considering that there are measures in place to minimize the risk posed by these purse seine fisheries, including safe handling and release protocols (CMM 2011-03) resulting in a high proportion of animals being released alive, there is a high degree of confidence that the fishery is highly likely to not hinder recovery of Minke Whale in the WCPO.* ***SG60 and SG80 are met.*** *Despite the relatively low number of interactions and that most individuals are released alive, without further evidence to support that any contingents in the WCPO population are not adversely impacted by UoA fishery operations, the assessment team cannot assert with a*

<table>
<tr><td colspan="2">PI 2.3.1</td><td colspan="3">The UoA meets national and international requirements for the protection of ETP species
The UoA does not hinder recovery of ETP species</td></tr>
<tr><td></td><td></td><td colspan="3">high degree of confidence that there are no significant detrimental direct effects of the UoA on this species. SG100 is not met.

Marine turtles

Interactions with six species of marine turtles have been recorded (Table 12) but the catch reported by observers on UoA vessels is very small for all species with only one caught per 87 sets and over 90% of these recorded as being released alive (Table 19). There is likely to be an unobserved level of mortality, however, of turtles that are entangled in FADs. Nevertheless, the recent Common Oceans (ABNJ) Project (2017) reported that a recent ecological risk assessment conducted for the Atlantic suggested that overall mortality from purse seine fisheries is inconsequential compared to longline fisheries (Angel et al. 2014). Also, although there is potential sea turtle mortality associated with FAD entanglement, and no estimates of such mortality so far, it is likely to be extremely low compared to mortality from other fishing gears (Restrepo et al. 2017).

Retention of turtles is prohibited, and all landings are monitored. The very low-level percentage of the total WCPFC Convention Area catch of the target species by UoA vessels, the broad distribution of all the species, and the 100% observer coverage makes it highly likely that the known direct effects of fishing by UoA vessels on all populations of marine turtles are not hindering their recovery. But, in the absence of better data on both the total mortalities (particularly from FAD entanglement), we have not attached a higher degree of confidence to this conclusion.

This meets the requirements of the SG 60 and SG 80 levels but not the SG 100 level.

Seabirds

Interactions with seabirds are very infrequent for purse seiners, there being only two instances in nearly 10,000 sets between 2013-2017. The black-footed albatross is regarded as an endangered species but there are estimated to be over 61,000 breeding pairs. Given it has a distribution that is mostly outside the area of the UoA, the low numbers of mortalities attributable to the UoA, and 100% observer coverage, gives a high degree of certainty that the known direct effects of fishing by UoA vessels on them are not hindering their recovery.

This meets the requirements of the SG 60, SG 80 levels and SG 100 levels.</td></tr>
<tr><td>C</td><td colspan="4">Indirect effects</td></tr>
<tr><td></td><td>Guidepost</td><td></td><td>Indirect effects have been considered and are thought to be highly likely to not create unacceptable impacts.</td><td>There is a high degree of confidence that there are no significant detrimental indirect effects of the fishery on ETP species.</td></tr>
<tr><td></td><td>Met?</td><td></td><td>FADs and Free school: Y – All elements</td><td>FADs and Free school: N – All elements</td></tr>
<tr><td></td><td>Justification</td><td colspan="3">Indirect trophic effects of fishing for tuna on the tropical pelagic ecosystem have been considered through a variety of modelling approaches (Kitchell et al. 1999, Sibert et al. 2006, Allain et al. 2007, Allain et al. 2015, Lehodey et al. 2014) and, although the impacts</td></tr>
</table>

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species
		are not negligible, they have not been considered irreversible and no particular impacts on ETP species have been identified. The warm pool ecosystem was found to be resistant to considerable perturbation (e.g. large changes in the harvest of the surface fish community) a feature apparently related to the high diversity of predators in the food web that consume a wide range of prey (Allain et al. 2015). The indirect effects have thus been considered and are unlikely to create unacceptable impacts on any ETP species, but the level of evidence is insufficient to assign a high degree of confidence to this conclusion. The requirements of the SG 80 level but not of the SG 100 level are therefore considered to be met for each of the elements.
References		Common Oceans (ABNJ) Tuna Project 2017, 2018b & 2018c, Clarke 2018, Escalle et al. 2015, Escalle et al. 2018, Filmater et al. 2013, Kitchell et al. 1999, Sibert et al. 2006, Allain et al. 2007, Allain et al. 2015, Lehodey et al. 2014, Peatman et al. 2018, Restrepo et al. 2017, Rice and Harley 2012a, WCPFC-SC 2018aRestrepo et al. 2017, Rice and Harley 2012a, WCPFC-SC 2018aCommon Oceans (ABNJ) Tuna Project 2017, 2018b & 2018c, Clarke 2018, Escalle et al. 2015, Escalle et al. 2018, Filmater et al. 2013, Kitchell et al. 1999, Sibert et al. 2006, Allain et al. 2007, Allain et al. 2015, Lehodey et al. 2014, Peatman et al. 2018,
OVERALL PERFORMANCE INDICATOR SCORE:		**Score**
~~**CONDITION NUMBER (if relevant): 2-1**~~ ~~**Condition: By the fourth surveillance audit, provide evidence that the direct effects of the UoA are highly likely to not hinder recovery of Cetacean species.**~~		**FADS sets: ~~75~~ 80** **Free school: ~~75~~ 80**

PI 2.5.1 – ETP Ecosystem outcome (Condition 2-4; re-scored and closed this year)

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.		
Scoring Issue		SG 60	SG 80	SG 100
a	Ecosystem status			
	Guidepost	The UoA is **unlikely** to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The UoA is **highly unlikely** to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.		
				a serious or irreversible harm.
	Met?	**FADs: Y** *Oceanographic– Yes* *Trophic - Yes* **Free school: Y** *Oceanographic– Yes* *Trophic - Yes*	**FADs: ~~N~~ Y** *Oceanographic– Yes* *Trophic - Yes* **Free school: Y** *Oceanographic– Yes* *Trophic - Yes*	**FADs: N** *Oceanographic– No* *Trophic - No* **Free school: ~~Y~~ N** *Oceanographic– No* *Trophic - No*
	Justification	~~There are aspects that are relevant to both set types, and aspects which pertain only to FAD sets.~~ ~~FADs and Free school: As described in the background, there has been a range of models of the structure and functioning of the pelagic ecosystems developed that support the main tuna fisheries and their responses to fishing and climate change (e.g. Allain et al. 2007, Allain et al. 2015, Kitchell et al. 1999, Lehodey et al. 2013, Leroy et al. 2013, Sibert et al. 2006).~~ ~~There have been substantial impacts from the depletion of the main target species, but although the trophic level of the catch had decreased slightly, no such decrease was apparent in the population trophic level (Sibert et al., 2006). Other modelling (Allain et al. 2015) suggests that the structure of the warm pool/cold tongue ecosystem is resistant to considerable perturbation (e.g. large changes in the harvest of the surface fish community).~~ ~~Overall, findings indicated that tuna fishery impacts on top-level predators in the Pacific Ocean were substantial but that ecosystem impacts were likely to be minor. These studies suggests it is unlikely that neither the UoA fishery in particular nor the whole WCPFC tuna fishery, are having an irreversible impact on ecosystem structure or functioning to a point where there would be a serious or irreversible harm~~ ~~For Free school sets this meets the requirements of the SG 60, SG 80 and SG 100 levels~~ ~~For FAD sets only, there is the additional issue of the potential broader impact of FADs that is beyond the fish removed by fishing. The presence of both anchored and drifting FADs has the potential to alter the distribution and migration of tunas (Leroy et al. 2013, Phillips et al. 2017). FADs have been shown to influence the behavior and movement patterns of skipjack, yellowfin, and bigeye tuna, with the juveniles of each species occupying shallower habitats when associated with FADs (Schaefer and Fuller 2002, 2005, 2010, Fuller et al. 2015). There is some evidence that indicated that FADs both attract and retain tuna, and may affect distribution and migrations of tuna (Leroy et al. 2013). Other studies support the proposal that the large majority of residences at floating objects by tuna are moderately short, and that there is little evidence to suggest that their biology, movement behaviours or entrainment to a region are being significantly affected (Phillips et al. 2017).~~ ~~Phillips et al. (2017) suggest that processes working at different scales may explain the inter- and intra-individual variability in fish behavior that they observed for bigeye and yellowfin tuna. They suggested that there was an interaction between fine scale variability in the availability of prey, the local density of conspecifics, and the multi-species~~		

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.
		~~composition of the schools themselves whilst islands and other bathymetric features may affect vertical behaviour at larger spatial scales. They concluded that purse-seiners set on floating objects because they bring tuna to a more easily found locality in horizontal space, and then aggregate them in relative shallow water through this surface behaviour. The surface-association events they identified varied greatly. While some events were clear and prolonged, the large majority are not, and extended surface-association behaviour was rarely exhibited immediately prior to capture.~~ ~~Leroy et al. (2013) noted that the ways in which FADs interact with the biotic components of tuna environmental preferences, through prey concentration, increased feeding on juvenile conspecifics, or incorrect habitat utilization, need further investigation, including tuna foraging and the effect of FADs on the behavior of other important species in the pelagic ecosystem.~~ ~~This is an area of active research to address the concern that the widespread use of FADs may be having important ecosystem effects. We expect that the monitoring and assessment programs that are in place for the WCPO fisheries are likely to be able to detect any major effects and expect that management would be responsive to them, so that Principle 1 and 2 objectives are still likely to be achieved. These monitoring and assessment programs are very comprehensive, the scientists involved are well aware of these ecosystem issues and are active in the research on them, so we consider it highly unlikely that they would disrupt key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.~~ ~~Nevertheless, the science is not yet at the stage where we could say that there is good evidence that this outcome is highly unlikely.~~ ~~For FAD sets this meets the requirements of the SG 60 but not of the SG 80 and 100 level.~~ *The MSC defines 'key ecosystem elements' as "the features of an ecosystem considered as being most crucial to giving the ecosystem its characteristic nature and dynamics and are considered relative to the scale and intensity of the UoA. They are features most crucial to maintaining the integrity of its structure and functions and the key determinants of the ecosystem resilience and productivity" (MSC Fisheries Standard v2.01 SA3.16.3).* *For this assessment, the ecosystem is therefore defined as the WCPO Warm Pool – Cold Tongue pelagic ecosystem. As per SA 3.16.3 and using expert judgement, the assessment team identified two ecosystem elements which reflect the "most crucial to giving the ecosystem its characteristic nature and dynamics" and are considered in relation to the scale of the UoA. Further MSC guidance states that "key ecosystem elements may include trophic structure and function (in particular key prey, predators, and competitors), community composition, productivity pattern (e.g., upwelling or spring bloom, abyssal, etc.), and characteristics of biodiversity" (MSC Fisheries Standard v2.01 GSA3.18.1). In this assessment, key ecosystem elements are defined as 1) the oceanographic processes of the Western Central Pacific Ocean that drive primary productivity, and 2) the trophic structure and function of the Western Central Pacific Ocean, including the potential ecological trap effect created by FADs.* ***Oceanographic processes of the WCPO*** *The UoA fishery occurs primarily in the equatorial region of the Western Central Pacific Ocean in the Warm Pool-Cold Tongue convergence zone, where oceanographic processes occur naturally on large spatial and temporal scales. Allain et al. (2007) describe the Warm Pool as an oligotrophic system characterized by low salinity, low nitrates, high temperature, deep*

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.
		thermocline, low surface chlorophyll and maximum chlorophyll located at 90m depth. The strong divergent equatorial upwelling, called the Cold Tongue, is favorable to the development of a large zonal band with high levels of primary production. The Warm Pool – Cold Tongue convergence zone is characterized by the merging of the warm, oligotrophic waters of the western equatorial region with the colder, nutrient-rich waters upwelled in the eastern equatorial Pacific. The position of this convergence zone is greatly dependent on the interannual variability of oceanographic conditions due to the El Niño Southern Oscillation (ENSO). It has been hypothesized that tuna migrations in the western central equatorial Pacific correlate with the position of the Warm Pool–Cold Tongue convergence zone (Lehodey et al. 1997). The eastern Pacific nutrient-rich zone supports high forage abundance, which concentrates in a band several hundred kilometers wide along the eastern edge of the warm-water pool. Tuna likely follow the movements of this convergence zone due to the high prey species concentrations (Lehodey 2001). Tuna fisheries, particularly purse-seine fisheries targeting skipjack, also appear to track the position of the Warm Pool–Cold Tongue convergence zone. Tuna habitat in the western Pacific improves with the addition of primary productivity from the Cold Tongue and this may explain the increasing catches in western countries (Solomon Islands or PNG) during the latter part of an El Niño event (Lehodey 2001). However, during La Niña events, the chlorophyll-rich Cold Tongue can extend as far west as 160°E, causing the Warm Pool habitat to retract; consequently fishing effort decreases in the central Pacific during these periods. ***SG60 is met** – While it is likely that oceanographic processes described above influence tuna fisheries in the WCPO, there is no indication, nor a plausible mechanism, by which the fishery itself could affect the oceanographic processes of the WCPO. Thus, as stated above and based on expert judgement per SA 3.16.5, and using a range of viewpoints provided by the above referenced material (SA 3.16.5.1b), the team concludes that the UoA has a ≤ 40th%ile probability of disrupting this key element.* ***SG80 is met** – As stated above, based on expert judgement per SA 3.16.5, and using a range of viewpoints provided by the above referenced material (SA 3.16.5.1b), the team concludes that it is highly unlikely (≤ 30th%ile probability) that the UoA impacts would disrupt the underlying ecosystem structure and function of the WCPO Warm Pool – Cold Tongue oceanographic convergence zone.* *SG100 is not met – Using expert judgement as per SA 3.16.5, the assessment team notes that, while it is highly unlikely that the UoA would disrupt the broader WCPO Warm Pool-Cold Tongue convergence zone ecosystem, the scoring guidepost at the SG100 requires 'evidence that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm'. However, there is currently no evidence to demonstrate this. Furthermore, clause SA3.16.5.1 states that team may use qualitative analysis and/or expert judgement in scoring a UoA at the SG60 and SG80, but this guidance does not include SG100, implying that quantitative evidence is required at the SG100. Without such evidence, **SG100 is not met.*** ***Trophic structure and function within the WCPO*** *Several studies, including Allain et al. (2015) and Griffiths et al (2019), can be used to judge the potential impact of fishing activity (both purse seine and longline) on trophic structure and function in the WCPO. The trophic structure of Warm Pool – Cold Tongue convergence zone ecosystem has been characterised using Ecopath and Ecosim (www.ecopath.org) models based on diet data (Allain et al. 2007). A further study (Allain et al. 2015) examined*

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.
		the Pacific Warm Pool province within the WCPO using the same modelling approach (Ecopath with Ecosim) to examine the potential impacts of purse seine and longline tuna fishing on the Warm Pool ecosystem, with a focus on trohic functioning. This ecosystem model was characterized by five trophic levels, a high number of trophic links between groups, and a diverse pool of prey for predators. In the model, the majority (74%) of the ecosystem's biomass was in trophic levels 1–2 (phytoplankton, zooplankton), whereas 89% of the industrial fish catch (tuna, edible bycatch, and other top predators) was in trophic levels 3–5. The model was used to explore nine different scenarios of fishing effort (five of which examined purse seine fishing effort), with simulations ranging from the implementation of measures designed to reduce and/or increase the amount of bycatch, the implementation of measures designed to mitigate bycatch, and the alteration of the amount of fishing effort on free swimming schools and on schools associated with FADs to decrease and/or increase the amount of tuna harvested. The simulations showed that, in general, the Warm Pool ecosystem is resistant to considerable perturbation (e.g. large changes in the harvest of the surface fish community), apparently related to the high diversity of predators in the food web that consume a wide range of prey. The structure of the ecosystem was most sensitive to changes in the biomass of mid-trophic level species that function as both important prey for higher trophic levels, as well as predators of lower trophic level organisms (Allain et al. 2015). *This type of ecosystem regulation is referred to as 'wasp-waist' control (Rice, 1995) and is one of the likely drivers of the western and eastern Pacific ecosystem structure and function (Griffiths et al., 2013). A key characteristic of wasp-waist systems is that disruption of the biomass of the "waist" groups (e.g., mid-trophic level forage species) by natural or anthropogenic impacts can create cascading effects, unpredictable in direction and magnitude, both upward and downward through the trophic levels of an ecosystem (Cury et al., 2000). The mid-trophic level forage species/groups impacted by purse seine fisheries include small tunas (e.g., skipjack and yellowfin) and other epipelagic and mesopelagic fish and crustaceans. The trophic structure within the Warm Pool ecosystem is most sensitive to changes in the biomass of these mid-trophic level forage groups, since they have a high standing biomass, are highly productive, and exert high top-down predation pressure on lower trophic levels, but also exert strong bottom-up pressure by being key prey for high-level predators (Griffiths et al., 2019). As such, increased catches by purse seine fisheries that affect, directly or indirectly, the biomass of the mid-trophic-level forage groups (i.e., trophic level 3.4–4.0) could compromise the structure and function of the Warm Pool ecosystem and have major implications for its dependent fisheries (Griffiths et al. 2019). It should be noted that, while certain mesopelagic species are important components of mid-trophic level biomass and could play a role in wasp-waist trophic dynamics, the diurnal migration patterns of these species effectively segregate them to the mesopelagic zone during the daytime hours where they are not vulnerable to purse seine fishing gear.* *Small yellowfin have been identified as keystone group in the Warm Pool model due to their high P/B and Q/B values and their diverse diets, but also because they are important prey for a range of predators. Similarly, with high biomass, high production, high consumption, and important cannibalism, small skipjack tuna occupy a significant position in the Warm Pool ecosystem as both a key predator and prey species. As both groups occupy the mid-trophic level and have recently undergone stock assessments, they provide ideal indicators for considering mid-trophic level structure and functioning within the ecosystem. Based on the most recent stock assessment (SC16), the WCPO yellowfin tuna spawning biomass is above the biomass LRP and recent F is below FMSY. The stock is not experiencing overfishing (100%*

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.
		probability F<FMSY) and is not in an overfished condition (0% probability SB/SBF=0<LRP). Estimates of spawning biomass for skipjack tuna in the WCPO are well above the level that will support MSY and current fishing mortality is approximately half the MSY level; the stock is not considered to be overfished or experiencing overfishing. With the trophic structure and function of the Warm Pool ecosystem being driven largely by mid-trophic level species, and upon examination of the most recent stock information suggesting that such species are currently at acceptable levels, the assessment team estimates the quantitative impact of the UoA on small yellowfin and skipjack abundance is above the maximum levels of impacts allowed under MSC v2.01 SA2.2.13b. This leads the assessment team to conclude that, currently, there is no indication of a trophic cascade occurring through lower trophic levels caused by depletion of key prey species in 'wasp-waist' food webs (MSC v2.01 GSA3.16.2). Furthermore, the team cannot assert that the UoA, comprised of 6 vessels out of a total of 1,622 purse seine vessels currently operating in the WCPFC (WCPFC 2021), has any likelihood of disrupting the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm to the ecosystem. *In addition to predator-prey interactions within the Western Central Pacific food-web, the team reviewed several studies examining the "ecological trap" hypothesis associated with FADs, which is thoroughly described in Section 7.3.7. This emerging, yet unproven hypothesis proposes that FADs may drive certain species to unsuitable habitats, ultimately resulting in detrimental consequences on their biology. Given the rapid increase of FAD deployments in all ocean basins, the concern of FAD networks creating an ecological trap for highly migratory fish species in marine ecosystems by altering their migratory pathways and therefore potentially affecting key biological processes (e.g., growth) is relevant. In general, FADs have been shown to potentially modify the pelagic habitat by aggregating small-sized skipjack, yellowfin and bigeye tunas and thereby enhance their vulnerability to predators. For example, predation on tunas by large pelagic fishes (e.g., sharks and billfishes) sampled from purse seine floating object sets (e.g., FADs) was found to be greater than for those captured via other methods (Hunsicker et al. 2012). The hypothesis of FADs acting as an ecological trap is based on three related steps outlined by Marsac et al. (2000): (1) the aggregation of small tunas under FADs is a fast, strong and long lasting process; (2) the large numbers of drifting FADs in the equatorial zone can alter the natural movements of this fraction of the tuna stocks; and (3) subsequently, drifting FADs affect negatively the growth and the natural mortality of small tunas which remain associated with FADs. Studies to test the hypothesis have been conducted, with equivocal results. Hallier and Gaertner (2008) reported that tunas associated with FADs in the Atlantic were less healthy than those in free schools, possibly resulting in differences in growth rates and condition (fitness) as a consequence of altered feeding patterns. While the authors suggest that these findings support the hypothesis that FADs act as ecological traps, they also noted the need for additional studies to investigate the long-term effect of FADs on the entire life cycle of tunas to better understand the mechanisms underlying the relationship between fitness and preference. Wang et al. (2019) considered habitat quality as a factor contributing to the concept of the ecological trap but found no particular adverse effects between tuna caught in free school and FAD sets. However, the authors noted that the habitat quality metric used did not consider important biological factors, including foraging behavior, attraction to floating objects depending on food availability, and body condition. Dagron et al. (2012) reviewed issues surrounding the ecological trap theory and noted that FAD sets in the WCPO were typically undertaken in areas where log sets were also undertaken and that deployed FADs essentially increased the density of floating objects rather than creating an entirely new habitat. They concluded that there is no unequivocal empirical evidence that FADs represent*

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.
		an 'ecological trap' that inherently disrupts tuna biology, although further research on this issue is warranted. *Griffiths et al. (2019) most recently used the ecosystem model of the western Pacific Warm Pool Province to explore the potential ecological impacts of varying FAD fishing effort (±50%) over 30 years. Their results indicated that reduction of FAD effort by at least 50% was predicted to increase the biomass of tuna species and sharks and return the ecosystem structure to a pre-industrial-fishing state within 10 years. Furthermore, Griffiths et al. (2019) found that over the 30-year simulation, the biomass of only eight of the 44 living groups varied by more than 10% under the largest simulated FAD effort changes (±100%). The authors state that while it is possible that these reasonably modest impacts are a result of the analyses being based upon a "shifting baseline" (Pauly, 1995) of the ecosystem state after decades of industrial fishing, such inertia appears to be a common characteristic of pelagic ecosystems. In the case of the Warm Pool ecosystem, this inertia appears to be attributable to the upper trophic levels consisting of a high diversity of highly productive groups that are generally opportunistic predators and consume a wide variety of prey. As a result, there were no trophic cascades that reached lower trophic levels (TL < 3), with only a <3% change in the biomass of any of these lower functional groups over 30 years. This also indicates that the majority of high-level predators in the Warm Pool appear to be exerting only weak top-down regulation of the tropical Warm Pool ecosystem.* *SG60 is met – Based on research from Griffiths et al. (2019) and Allain et al (2015), and others, assessment of the risks of "serious or irreversible harm" to the Western Central Pacific Warm Pool ecosystem in accordance with the maximum levels of impacts allowed under MSC v2.01 SA2.2.13b, led to the conclusion that there is currently no indication of a trophic cascade occurring through lower trophic levels caused by depletion of key prey species in 'wasp-waist' food webs (MSC v2.01 GSA3.16.2). With respect to the ecological trap hypothesis, the assessment team reviewed available information and, using expert judgement per SA 3.16.5, determined that, at this time, there is no indication of "serious or irreversible harm" to trophic structure and function resulting from UoA operations. The assessment team also determines that the UoA, comprised of 6 vessels out of a total of 1,622 purse seine vessels in the WCPFC (WCPFC 2021), has a correspondingly minimal impact on the trophic functioning within the Western Central Pacific. As such, the team concludes there is less than a 40% probability of disrupting this feature to a point where there would cause serious or irreversible harm to the trophic structure and function within the Western Central Pacific ecosystem. SG60 is met.* *SG80 is met – Based on the research noted above, assessment of the risks of "serious or irreversible harm" to the Western Central Pacific Warm Pool ecosystem in accordance with the maximum levels of impacts allowed under MSC v2.01 SA2.2.13b, led to the conclusion that there is currently no indication that a trophic cascade through lower trophic levels caused by depletion of key prey species in 'wasp-waist' food webs (MSC v2.01 GSA3.16.2) is occurring. Furthermore, with respect to the ecological trap hypothesis, the assessment team reviewed available information and, based on expert judgement per SA 3.16.5 supported by research from Dagron et al (2012), Wang et al. (2019), Hallier and Gaertner (2008), and others, trophic impacts resulting from FADs acting as ecological traps have not been unequivocally identified. Finally, the assessment team concludes that the UoA, comprised of less than 0.4% of the purse seine vessels in the WCPFC (WCPFC 2021), has a correspondingly low probability of serious or irreversible harm to the trophic structure and function within the Western Central Pacific. Thus, per MSC v2.01 SA3.16.2, the assessment team has judged*

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.
		that the UoA is highly unlikely (≤ 30%ile) to disrupt the trophic functioning within the WCPO Warm Pool ecosystem. SG80 is met. *SG100 is not met – Based on the above noted studies, UoA impacts to the trophic structure and function within the Western – Central Pacific are considered highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. This assumption is made partially based on the opportunistic diets of high-level predators exerting only weak top-down regulation of food webs and the trophic system being primarily driven by mid-trophic level species (e.g., small yellowfin and skipjack tuna), which appear to be faring well under current management. The assessment team carefully considered the information presented on FAD networks functioning as ecological traps and concluded there is currently no indication of serious of irreversible harm to trophic structure and function of the ecosystem. Finally, given the relatively small size of the UoA (less than 0.4% of all purse seine vessels currently operating in the WCPFC (WCPFC 2021)), the assessment team notes that the likelihood of UoA fishing efforts resulting in serious or irreversible harm to the trophic structure and functioning in the ecosystem are correspondingly small. Research is available with which to estimate impacts to trophic functioning within the Western Central Pacific, and studies continue to explore the relationship between FADs and the broader health of epipelagic ecosystems. However, the assessment team does not consider there to be sufficient evidence to support the conclusion that the UoA is highly unlikely to disrupt the trophic relationships underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. Thus, SG100 is not met for this element.*
References		Allain et al. 2007, Allain et al. 2015, Schaefer and Fuller 2002, 2005, 2010, Fuller et al. 2015, Kitchell et al. 1999, Lehodey et al. 2013, Leroy et al. 2013, Phillips et al. 2017, Sibert et al. 2006 *Pauly, 1995 ; Rice, 1995 ; Cury et al., 2000; Allain et al. 2007, Griffiths et al., 2013; Griffiths et al. 2019 ; Hunsicker et al. 2012 ; Lehodey et al. 1997; Lehodey 2001 ; Orue et al. 2019 ; Dagron et al, 2012 ; Allain et al., 2015 ; Wang et al, 2019; Marsac et al., 2000; Hallier and Gaertner 2008*
OVERALL PERFORMANCE INDICATOR SCORE:		Score
~~CONDITION NUMBER (if relevant): 2-7~~ ~~FAD sets: By year four the fishery must provide evidence that the UoA is **highly unlikely** to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.~~		FADs: ~~60~~ 80 Free school: ~~100~~ 80

The following PIs were re-scored during this Year 2 surveillance. New rationale is denoted with ***italic*** and out-of-date language with ~~strikethrough~~. Changes made during the year 1 surveillance updated this year are denoted with *orange* text.

PI 2.3.3 – ETP species information (Condition 2-3; closed this year)

PI 2.3.3	**Relevant information is collected to support the management of UoA impacts on ETP species, including:** ▪ **Information for the development of the management strategy.**

		▪ **Information to assess the effectiveness of the management strategy; and** ▪ **Information to determine the outcome status of ETP species.**		
Scoring Issue		SG 60	SG 80	SG 100
a	Information adequacy for assessment of impacts			
	Guidepost	Qualitative information is **adequate to estimate** the UoA related mortality on ETP species. OR If RBF is used to score PI 2.3.1 for the UoA: Qualitative information is **adequate to estimate productivity and susceptibility** attributes for ETP species.	Some quantitative information is **adequate to assess** the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species. OR If RBF is used to score PI 2.3.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for ETP species.	Quantitative information is available to assess with a high degree of certainty the **magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status** of ETP species.
	Met?	FADs and Free school: Y – All elements	FADs and Free school: ~~N~~ Y - Cetaceans Y – All other elements ~~No~~ Y – Mobulids	FADs and Free school: N – Whale sharks, Silky shark, Oceanic whitetip shark, Marine turtles; Y –, Seabirds Not scored - Cetaceans
	Justification	**Whale shark** Information available on the key shark species is collected mainly by the combination of vessel logbooks and observer programs (with 100% observer coverage) as outlined in section 3.2. It includes data on catch weight and effort at an operation level for most fleets, and some size composition data and biological data. The information collected provides representative, unbiased and verified data on the number of interactions and the initial fates of the animals encountered and is consistent with the information requirements outlined in GSA3.6.3.1. These data also allowed the potential impacts of a range of post-release survival values to be evaluated in the risk assessment for whale sharks. These measures are supported by a Shark Research Plan that provides additional information on specific topics of relevance to the assessment of the impact of purse seine fishing. A quantitative assessment of the level of mortality is available and a risk assessment for the impact of purse seine fishing on WCPO whale sharks. This information does not yet support a high degree of certainty however, because sets on whale sharks are still common, and post-release survival is a major source of uncertainty in the risk assessment (Common Oceans (ABNJ) Tuna Project 2018c). This meets the requirements of the SG 60 and SG 80 levels but not of the SG 100 level. **Silky shark**		

		Information available on silky shark is collected mainly by the combination of vessel logbooks and the observer program (with 100% observer coverage) as outlined in section 3.2. It includes data on catch weight and effort at an operation level for most fleets, and some size composition data and biological data. The information collected provides representative, unbiased and verified data on the number of interactions and the initial fates of the animals encountered and is consistent with the information requirements outlined in GSA3.6.3.1. These measures are supported by a Shark Research Plan that provides additional information on specific topics of relevance to the assessment of the impact of fishing by longlines. There is some quantitative information available on the level of mortality for the UoA from the observer program and it is expected to be small relative to the broader impact of fishing on the whole stock. The UoA itself is not considered to be a threat to the protection of silky sharks. There is a stock assessment for silky shark that has estimated the consequences of fishing on their status in the WCPO. Information on post-release survival is missing as is information on rates of entanglement in FADs. Nevertheless, the abundance indices used in this assessment will reflect the impacts of all sources of mortality, whether they are observed or not. This meets the requirements of the SG 60 and SG 80 levels but not of the SG 100 level. **Oceanic whitetip shark** Information available on oceanic whitetip sharks is the same as for silky sharks. These measures are supported by a Shark Research Plan that provides additional information on specific topics of relevance to the assessment of the impact of fishing by longlines. There is some quantitative information available on the level of mortality for the UoA from the observer program and it is expected to be small relative to the broader impact of fishing on the whole stock. There is a stock assessment that has provided an estimated of the consequences of fishing on the status of oceanic whitetip shark. Although this has estimated the species to be depleted by fishing, especially by longlines, the UoA itself is not considered to be a threat recovery of the species. Information on post-release survival is missing as is information on rates of entanglement in FADs. Nevertheless, the abundance indices used in this assessment will reflect the impacts of all sources of mortality, whether they are observed or not. This meets the requirements of the SG 60 and SG 80 levels but not of the SG 100 level. ~~**Cetaceans**~~ ~~Data on the bycatch of cetaceans is collected by observers under the ROP following the data collection protocols outlined in Section 3.2. There has been a requirement for 100% observer coverage on purse seine vessels since 2010. The information collected provides representative, unbiased and verified data on the number of interactions and the initial fates of the animals encountered and is consistent with the information requirements outlined in GSA3.6.3.1.~~ ~~A quantitative assessment of the level of mortality is available, which represents some information about the level of mortality and allows an estimate to be made of the UoA related mortality , but there is expected to be a level of mortality from entanglement in FADs, and also some post-release mortality that are unobserved. The consequences for the status of cetaceans cannot therefore be fully evaluated. Information on post-release survival is missing.~~ ~~This meets the requirements of the SG 60 level but not of the SG 80 level.~~ ***Cetaceans (SG80)***

		Data on the bycatch of cetaceans is collected by observers following established data collection protocols. There has been a requirement for 100% observer coverage on purse seine vessels since 2010, and this level has been met except for lower coverage during COVID-19. A quantitative assessment of the level of mortality is available based on observer data identifying cetaceans to species and including life status upon release. There is expected to be some mortality from encounters with fishing gear (e.g., FADs and entanglement in net), and some unobserved post-release mortality which can be estimated based on the literature (e.g., Escalle et al. 2015; Anderson et al. 2020). The team also notes the evidence in the literature that most cetaceans do not regularly associate with FADs (Anderson 2014) and observer data from the UoA confirms that most cetacean interactions are ***not*** *in FAD sets. There are few isolated records of cetacean entanglement potentially attributed to FADs in the literature, and the scale of this source of mortality on marine mammals is considered small (Anderson 2014). Furthermore, potential threats from ghost fishing and entanglement are being mitigated as vessels operating in the WCPO are deploying the low-entanglement FADs as specified under CMM 2021-01.* *The consequences for the status of cetaceans can therefore be evaluated with some certainty, but would be more reliable with UoA-specific information on post-release survival. Current information is considered adequate to estimate UoA related mortality and support measures to manage the impacts (i.e., observer coverage is 100% and they are identifying cetaceans to species and recording life status, etc.), meeting the* ***SG60 and SG80.*** *The assessment team is unable to conclude that the information is adequate assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of cetaceans, due to the lack of post-release mortality data available for this species.* ***SG100 is not met****.* **Marine turtles** Data on the bycatch of marine turtles is collected by observers under the ROP following the data collection protocols outlined in Section 3.2. There has been a requirement for 100% observer coverage on purse seine vessels since 2010. The information collected provides good data on the number of interactions and the initial fates of the animals encountered. A quantitative assessment of the level of mortality is available but there is expected to be a level of mortality from entanglement in FADs that is unobserved. The consequences for the status of any species of marine turtles cannot therefore be fully evaluated. Information on post-release survival is missing as is information on rates of entanglement in Fads. Nevertheless, the information available has been sufficient for researchers to conclude that, although there is potential sea turtle mortality associated with FAD entanglement, it is likely to be extremely low compared to mortality from other fishing gears (Restrepo et al. 2017). This meets the requirements of the SG 60 and SG 80 levels but not of the SG 100 level. **Black-footed albatross** Data on the bycatch of seabirds is collected by observers under the ROP following the data collection protocols outlined in Section 3.2. There has been a requirement for 100% observer coverage on purse seine vessels since 2010. A quantitative assessment of the level of mortality is available and the status of the black-footed albatross is monitored at most breeding colonies. This provides a high degree of certainty of the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of the species.

		This meets the requirements of the SG 60, SG 80 and SG 100 levels. ~~Mobulas (SG60)~~ ~~Data on the bycatch of Mobula rays is collected by observers under the ROP following established data collection protocols. There has been a requirement for 100% observer coverage on purse seine vessels since 2010. A quantitative assessment of the level of mortality is available but there is expected to be a level of post-release mortality that has yet to be quantified. The recent change in their status as 'species of interest' requires observers to record interactions and associated life status upon discard (CMM 2019-05 in effect as of 1 January 2021). This information currently available through observer programs and logbook data is considered qualitative information that is adequate to estimate the UoA related mortality, meeting the SG60. However, due to the lack of species-level information and associated fate data in observer reports available for this assessment, the assessment team is unable to confirm that the 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 these species.~~ ~~**SG80 is not met**~~. ***Mobulas (SG80)*** *Data pertaining to the bycatch of mobula rays is systematically collected by designated observers operating under the framework of the Regional Observer Program (ROP), adhering to established protocols for data collection. Since 2010, there has been a mandate for 100% observer coverage on purse seine vessels. A quantitative evaluation of the mortality rates and outcomes of captured rays spanning 2019 to 2022 has been conducted, revealing that 26 rays were captured by the UoA during the 2022 season. The recent reclassification of mobula rays as a 'species of interest' necessitates observers document all interactions and the corresponding life status upon discarding, as stipulated by CMM 2019-05, which took effect on 1 January 2021. While observers have been shown to not always identify mobulid rays to species, there is still enough information to consider it adequate for evaluating the extent of UoA impacts,* ***meeting SG60****.* *The assessment team underscores that species-level fate information is also collected by observers which allows for estimation of mortality caused by the UoA. With 100% observer coverage and fate data, some quantitative information is available that is considered adequate to assess the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of mobulids, and* ***SG80 is met****.* *It is the assessment team's assumption based on the available observer data that easily identifiable mobulids like the giant manta (Manta birostris) are consistently identified to species, but other smaller, less easily distinguishable mobulids are often identified as 'Mantas, devil rays nei'. This lack of consistent identification of all mobulid interactions to species prevents the team from having a high degree of certainty on the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of all mobulid species;* ***SG100 is not met****.*		
b	Information adequacy for management strategy			
	Guidepost	Information is adequate to support **measures** to manage the impacts on ETP species.	Information is adequate to measure trends and support a **strategy** to manage impacts on ETP species.	Information is adequate to support a **comprehensive strategy** to manage impacts, minimize mortality and injury of ETP species, and evaluate with a **high degree of certainty**

				whether a strategy is achieving its objectives.
	Met?	FADs and Free school: Y – All elements	FADs and Free school: ~~Y– All elements~~ ~~N~~ Y- Whale Sharks, cetaceans, Mobulids Y- Seabirds, Sea Turtles, Silky Shark, Oceanic Whitetip,	FADs and Free school: Y – Seabirds; Not scored – Cetaceans; N – All other elements
	Justification	~~**Whale shark**~~ ~~The information described under SI a is adequate to measure trends and support a comprehensive strategy to manage the impacts of the UoAs on whale sharks. It is not, however, sufficient to determine with a high degree of certainty whether objectives are being achieved because of uncertainties with the current risk assessment.~~ ~~This meets the requirements of the SG 60 and SG 80 levels but not of the SG 100 level.~~ ~~Whale Sharks (SG60)~~ ~~Additional information is needed to demonstrate that appropriate information is collected to support a strategy to avoid setting on Whale Sharks. The assessment team has previously sought clarification from SPC and the WCPFC ROP on this issue and was informed that all observer information is subject to rigorous review and evaluation, and observers debriefed after each trip to discuss trip activities and observed "anomalies". The 2021 Technical Compliance Committee (TCC) report notes there may be issues with lack of distinction in the between coincidental interactions and intentional sets related to cetaceans and Whale Sharks, hindering compliance efforts to address potential infractions. The TCC has prioritized a specific task for 2022 to 'review and provide advice on improvements to the ROP minimum standard data fields for whale sharks and cetaceans – to allow for a distinction between an interaction and a possible infraction in the compliance case file system'.~~ ~~Current information is useful for understanding potential impacts and are considered adequate to support measures to manage the impacts (i.e., observers categorizing sets as "whale shark", etc), meeting the SG60. However, the assessment team is unable to confirm that the data available to the Commission is sufficient measure trends and support a strategy to manage impacts to this species. For these reasons, SG80 is not met.~~ ***Whale Sharks (SG80)*** *During the first-year's site visit, data was systematically acquired to elucidate a strategic approach aimed at preventing incidental interactions with whale sharks. Throughout the first-year surveillance, the assessment team actively sought clarification from both the Secretariat of the Pacific Community (SPC) and the Western and Central Pacific Fisheries Commission's Regional Observer Program (WCPFC ROP) on this critical matter. It was conveyed that all information provided by observers undergoes a meticulous process of rigorous review and evaluation. Following each observation trip, observers engage in debriefing sessions to analyze trip activities and identify observed anomalies. Furthermore, the 2021 Technical Compliance Committee (TCC) report highlighted potential challenges arising from a lack of distinction between coincidental interactions and deliberate sets involving cetaceans and whale sharks, thereby impeding compliance efforts.* *During the subsequent site visit conducted for the second-year surveillance audit, the assessment team collaborated with observers to comprehensively review the ROP SP-3*		

		form. The specific objective was to differentiate unintentional from intentional sets by scrutinizing the temporal alignment between the observation of the species of special interest (SSI) and the deployment of the net. Through these interviews, the team observed that the ROP SP-3 forms do indeed facilitate a clear differentiation between unintentional and intentional settings. *With this information, the assessment team can confidently affirm that the data at the disposal of the Commission is sufficiently robust to delineate trends and advocate for a strategic approach to mitigate impacts on this species. Consequently, the criteria outlined in **SG 60 and 80 are met.*** *The information available does not consist of 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, so **SG100 is not met**.* ~~**Silky shark**~~ ~~The information described under SI a is adequate to support a comprehensive strategy to manage the impacts of the UoA on silky shark. There is a high degree of certainty that the UoA is not a threat to silky sharks and the information collected is sufficient to detect any change to the risk to the species posed by the fishery. Nevertheless, there are still some data deficiencies identified in scoring issue a.~~ ~~This meets the requirements of the SG 60, SG 80 levels but not the SG 100 level.~~ ~~**Oceanic whitetip shark**~~ ~~The information described under SI a is adequate to support the strategy to manage the impacts of the UoA on whitetip sharks. It is highly likely that the UoA is not a threat to oceanic whitetip shark and the information collected is sufficient to detect any change to the risk to the species posed by the fishery. Nevertheless, there are still some data deficiencies identified in scoring issue a.~~ ~~This meets the requirements of the SG 60, SG 80 levels but not the SG 100 level.~~ ***Silky Shark and Oceanic Whitetip Shark (SG80)*** *Currently, the information obtained through observer programs and logbook data is useful in to measuring trends and supporting measures to manage impacts to these species, as they inform stock assessments that are regularly conducted for these species. **SG60 and SG80 are met.*** *For scoring at the SG100 level, information is necessary to ensure and continue to confirm that the UoA has no impact on these ETP species, as facilitated by a comprehensive strategy (i.e., a complete and tested strategy made up of linked monitoring, analyses, and management measures and responses; Table SA8 in the MSC Standard v2.01). Due to the lack of information related to the status of FADs in WCPO waters, and the impact that entanglement with these and post-release mortality may have on these ETP species, information is not considered 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. **SG100 is not met.*** ~~**Cetaceans**~~ ~~The information described under SI a is adequate to measure trends in the number of observed interactions and this is sufficient to support the strategy to manage the impacts of the UoAs on cetaceans which is based mainly on minimising the number of such interactions. The observers are also able to monitor newly introduced measures such as~~

~~the introduction on non-entangling FADs. The available information is not, however, sufficient to determine with a high degree of certainty whether objectives are being achieved because population level data are not available for Cetaceans.~~

~~This meets the requirements of the SG 60 and SG 80 levels but not of the SG 100 level.~~

~~Cetaceans (SG60)~~
~~Additional information is needed to demonstrate that appropriate information is collected to support a strategy to avoid setting on cetaceans. The assessment team has previously sought clarification from SPC and the WCPFC ROP on this issue and was informed that all observer information is subject to rigorous review and evaluation, and observers debriefed after each trip to discuss trip activities and observed "anomalies". The 2021 Technical Compliance Committee (TCC) report notes there may be issues with lack of distinction in the between coincidental interactions and intentional sets related to cetaceans and Whale Sharks, hindering compliance efforts to address potential infractions. The TCC has prioritized a specific task for 2022 to 'review and provide advice on improvements to the ROP minimum standard data fields for whale sharks and cetaceans – to allow for a distinction between an interaction and a possible infraction in the compliance case file system'.~~

~~Current information is useful for understanding potential impacts and are considered adequate to support measures to manage the impacts (i.e., observers categorizing sets as "live whale" etc), meeting the SG60. However, the assessment team is unable to confirm that the data available to the Commission is sufficient to address the implementation and effectiveness of CMM 2011-03 and is therefore not adequate to measure trends and support a strategy to manage impacts to cetaceans. For these reasons, SG80 is not met.~~

Cetaceans (SG80)

During the first-year's site visit, data was systematically acquired to elucidate a strategic approach aimed at preventing incidental interactions with cetaceans. Throughout the first-year surveillance, the assessment team actively sought clarification from both the Secretariat of the Pacific Community (SPC) and the Western and Central Pacific Fisheries Commission's Regional Observer Program (WCPFC ROP) on this critical matter. It was conveyed that all information provided by observers undergoes a meticulous process of rigorous review and evaluation. Following each observation trip, observers engage in debriefing sessions to analyze trip activities and identify observed anomalies. Furthermore, the 2021 Technical Compliance Committee (TCC) report highlighted potential challenges arising from a lack of distinction between coincidental interactions and deliberate sets involving cetaceans and whale sharks, thereby impeding compliance efforts.

During the site visit conducted for the second-year surveillance audit, the National Fisheries Authority (NFA) provided recent observer data for the fleet that showed '#6. Live Whale' set codes recorded by observers from 2019-2023. The assessment team held interviews with observers, crew members, and captains confirming that the observer will record a '6. Live Whale' set code on form ROP SP-3, indicating a clear differentiation between an unintentional and intentional set based on the time the whale was sighted and the time the set began., The assessment team collaborated with observers to comprehensively review the ROP SP-3 form. The specific objective was to differentiate unintentional from intentional sets by scrutinizing the temporal alignment between the observation of the species of special interest (SSI) and the deployment of the net. Through these interviews, the team observed that the ROP SP-3 forms do indeed facilitate a clear differentiation between unintentional and intentional settings based on the sighing time and set time fields.

		With this information, the assessment team can confidently affirm that the data at the disposal of the Commission is sufficiently robust to delineate trends and advocate for a strategic approach to mitigate impacts on this species. Consequently, the criteria outlined in ***SG 60 and 80 are met.*** *The information available does not consist of 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, so* ***SG100 is not met****.* **Marine turtles** The information described under SI a are adequate to support the strategy to manage the impacts of the UoA on marine turtles. It is likely that the UoA is not a threat to marine turtles. The information collected is sufficient to detect any change to the risk to these species posed by the fishery but, for FAD sets, there is some missing information on mortality from entanglements. There is also a lack of population level data. This meets the requirements of the SG 60 and SG 80 levels but not of the SG 100 level **Black-footed albatross** The information described under SI a is adequate to support the strategy to manage the impacts of the UoA on seabirds. It is highly likely that the UoA is not a threat to seabirds and the information collected is sufficient to detect any change to the risk to the species posed by the fishery. This meets the requirements of the SG 60, SG 80 and SG 100 levels. ~~Mobulids (SG60~~) ~~The recent change in their status as 'species of interest' which requires observers to record their life status upon discard (CMM 2019-05 in effect beginning 1 January 2021). Currently, the information obtained through observer programs and logbook data available is adequate to support measures to manage impacts, meeting the SG60. However, due to the lack of species-level information and associated fate data in observer reports, the assessment team is unable to confirm that the information provided to the Commission is sufficient to measure trends and support a strategy to manage impacts to this species. SG80 is not met.~~ ***Mobulids (SG80)*** *A quantitative evaluation of the mortality rates and outcomes of captured rays spanning the period from 2019 to 2022 has been conducted, revealing that 26 rays were captured by the entire Unit of Assessment (UoA) during the 2022 season. The recent reclassification of mobula rays as a 'species of interest' necessitates observers to meticulously document interactions and the corresponding life status upon discarding, as stipulated by Conservation and Management Measure (CMM) 2019-05, which took effect on 1 January 2021. Presently, this information is accessible through observer programs and, to some extent, qualitatively through logbook data, thereby aligning with the standards outlined in SG60. Notably, the assessment team underscores that, based on observer interviews and reports, species-level information pertinent to fate is also available for incorporation into the assessment. The assessment team affirms that the available information is sufficiently robust to evaluate UoA-related mortality and associated impacts, leading to the conclusion that information is adequate to measure trends and support a* ***strategy*** *to manage impacts on ETP species.* *Consequently,* ***SG 60 and 80 are met****.*

		*The information available does not consist of 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, so **SG100 is not met**.*
References		*Anderson 2014; Escalle et al. 2015; Anderson 2020*
OVERALL PERFORMANCE INDICATOR SCORE:		**Score**
CONDITION NUMBER (if relevant): 2-3 ~~**Condition. FAD sets and Free school sets. By the fourth surveillance audit, provide some quantitative information that 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 Cetaceans.**~~ ~~*FAD sets and Free school sets: By the fourth surveillance first surveillance audit following fishery recertification , provide:*~~ ~~*SI a. some quantitative information that 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 Mobulid Rays*~~ ~~*SI b. Evidence that information is adequate to measure trends and support a strategy to manage impacts on ETP [cetaceans, whale sharks and mobulids] species*~~ *Condition Closed Year 2 (2023)*		**FADs:** ~~**65**~~ **80** **Free school:** ~~**65**~~ **80**

PI 2.4.1 – Habitats outcome (Condition 2-4; closed this year)

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area(s) covered by the governance body(s) responsible for fisheries management.		
Scoring Issue		SG 60	SG 80	SG 100
a	Commonly encountered habitat status			
	Guidepost	The UoA is **unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
	Met?	FADs:Y Free school: Y	FADs: Y Free school: Y	FADs: Y Free school: Y
	Justification	**FADs**: The deployment of purse seine nets on all types of FADs fishery would never routinely contact demersal habitats and no potential for serious or irreversible harm to pelagic habitats from the use of this fishing gear. Knowledge in relation to the way purse seine fishing gear is used as well as the areas where the fleet operates (open ocean, deep waters) is sufficient to discount any significant impacts on seabed habitats from the fishery. In 2010, the WCPFC adopted measures for 100% coverage of purse seine vessels operating between 20°N and 20°S. Data from logbooks, VMS tracks of vessels and observer reports provide evidence that the fishery operates in areas and in a way where there is no serious or irreversible harm to habitats. For anchored FAD sets there is an additional ~~consideration is the potential impact of the FADs themselves on seafloor habitats from~~ *of impacts from* the *anchors* that secure the FADs to the seafloor. ~~As outlined in the background,~~ We estimate that the anchor and attachment chain for a single FAD may damage about 140 sq m of seafloor. With a maximum of 2,000 anchored FADs, even if all these were attributable to UoA vessels, the total area impacted would be less than 1 sq km within an EEZ area of over 3 Million sq km. This very small footprint of anchors relative to the size of the total area of the AW and EEZ assures that the damage is a negligible fraction of available habitat. *Additionally, there is evidence that anchored FAD use is declining, with fewer sets made per trip per year (https://www.fia-png.com/fads-tracking).* **This meets the requirements of the SG 60, SG 80 and SG 100 levels.** **Free school**: There is no possibility that the fishery would routinely contact demersal habitats and no potential for serious or irreversible harm to pelagic habitats. Knowledge in relation to the way purse seine fishing gear is used as well as the sea areas where the fleet operates (open ocean, deep waters) is sufficient to discount any significant impacts on seabed habitats from the fishery. In 2010, the WCPFC adopted measures for 100% coverage of purse seine vessels operating between 20°N and 20°S. Data from logbooks, VMS tracks of vessels and observer reports, provides good evidence that the fishery operates in areas and in a manner in which there is no serious or irreversible harm to habitats.		

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.		
		This meets the requirements of the SG 60, SG 80 and SG 100 levels.		
b	VME habitat status			
	Guidepost	The UoA is **unlikely** to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
	Met?	FADs: Y Free school: Not relevant	FADs: ~~N~~ ***Y*** Free school: Not relevant	FADs: N Free school: Not relevant
	Justification	**FADs**: Drifting FADs may ~~also~~ have impacts if they are lost and wash up on coral reefs (as could lost/*detached* anchored FADs) which are defined as a *vulnerable marine ecosystems* (VME). There are no other VME types that may be impacted by FAD interactions. Escalle et al. (2018c) ~~have~~ estimated that at least 5% of buoys (used to track individual drifting FADs) ended up beached with the connected FAD potentially damaging sensitive ecosystems ~~such as~~ *including* coral reefs. This ~~was considered to be~~ *was* an underestimate as buoys may be deactivated *(battery death, etc.)* before reaching *reefs and* coastlines. ~~The number of drifting FADs used by UoA vessels and the proportion lost each year is not known.~~ UoA vessels made on average 184 sets on manufactured drifting FADs per year between 2013 and 2017 (range 70 to 333). ~~As detailed in the background section 3.5.7,~~ The worst-case scenario ~~a~~ loss of 10% of 333 FADs (assuming each set was on a different FAD) would equate to 33 FADs *attributed to this UoA* ~~potentially~~ washing up on coral reefs. This represents 1 FAD per 435 sq. km. of reef per year, 1 FAD per 87 sq km over a five-year certification period, and less than 0.001% of PNGs area of coral ~~reefs~~, *reefs if* all remained within PNG waters. These could be expected to cause some local damage at beaching sites, but these numbers would be unlikely to reduce structure and function of any coral reefs to a point where there would be serious or irreversible harm (meaning it would be unable to recover to at least 80% of its unimpacted structure, biological diversity, and function within 5-20 years, if the impact were to cease entirely). ~~Nevertheless, this issue has not been well studied, however, so evidence about the impact is minimal. Cumulative impacts over years may also be important.~~ *More recent evidence collected during the second surveillance audit suggests the fishery is participating in fewer FAD sets than previously reported and deploys far fewer than the 40 per vessel allowed by PNG NFA (Table 7; fleet size = 55 vessels). In general the UoA has become largely a free school fishery in recent years, with less than 10% of catch coming from FAD sets (Figure 1).* For PNG, the relative importance of the different threats to coral reefs have been evaluated and marine-based pollution is the least pervasive threat, affecting less than 5 percent of reefs (Burket et al. 2011, 2012; **Error! Reference source not found.**). Although their analyses did not explicitly include lost fishing gear such as derelict FADs it seems very unlikely that its inclusion could greatly elevate the relative importance of marine		

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.

debris as a local threat for coral reefs either within PNG waters or in the Coral Triangle as a whole; other local and more global threats are estimated to be so much more important as a current and future risk to coral reefs.

The ~~actual~~ number of lost or derelict FADs *are not currently known, though recent improvements to FAD tracking include buoy deployment and reporting (see Escalle et al. 2021). Based on what is known about the number of FADs deployed and the potential impacts under a worst-case loss scenario, it is unlikely that the UoA would reduce structure and function of PNG's VME habitats to a point where there would be serious or irreversible harm and* ***SG60 is met****.* ~~however, are not recorded, and impacts have also not been directly studied, so although a wide range of risks to coral reefs have been evaluated, and marine debris is a minor component, the evidence about FAD impacts specifically is deficient.~~

Areal impacts of individual beached FADs on coral reefs have been studied in several ocean basins and range from less than 100 m^2 to about 500m^2 (DeAlteris et al. 2018; Zudaire et al 2018; Banks and Zaharia 2020). As mentioned above, even the most precautionary scenario of FAD loss and coral reef beaching suggests an impact area of just a tiny fraction of coral reefs in the WCPO. Additionally, this is a well studied and closely tracked issue, with the number of FAD deployments limited by WCPFC and individual Pacific Island Nations. This and other UoAs are involved in collaboration with scientists to further the knowledge of FAD loss and impacts to coral reefs, and trends of FAD use by the UoA are closely monitored. Therefore, there is enough information to conclude that the UoA is highly unlikely to reduce structure and function of the VME habitats (coral reefs) to a point where there would be serious or irreversible harm. ***SG80 is met.***

~~This meets the requirements of the SG 60 level but not of the SG 80 level~~.

Free school: No VMEs are affected by Free school sets so this scoring issue is not relevant.

Table 9. FAD use by PNG FIA member companies, 2019, 2022.

DRIFTING FADS (dFAD)

Actual FAD quantity deployed by your company

	Fishing Company Names						Type		Material			RSP/GGGI/NFA/ISSF	
Year	Starcki	TSP	TPJ	Frabelle fishing	RD fishing	Bluecatch	Drifting	Anchored	Non biodegradable/ Non organic	Biodegradable and Organic	Mixed	Entangling	No Entangling
2019	0	0	0	0	81	0	*				*	*	
2020	0	20	0	0	133	0	*				*		*
2021	0	0	35	0	120	0	*				*		*
2022	0	9	42	0	148	0	*				*		*

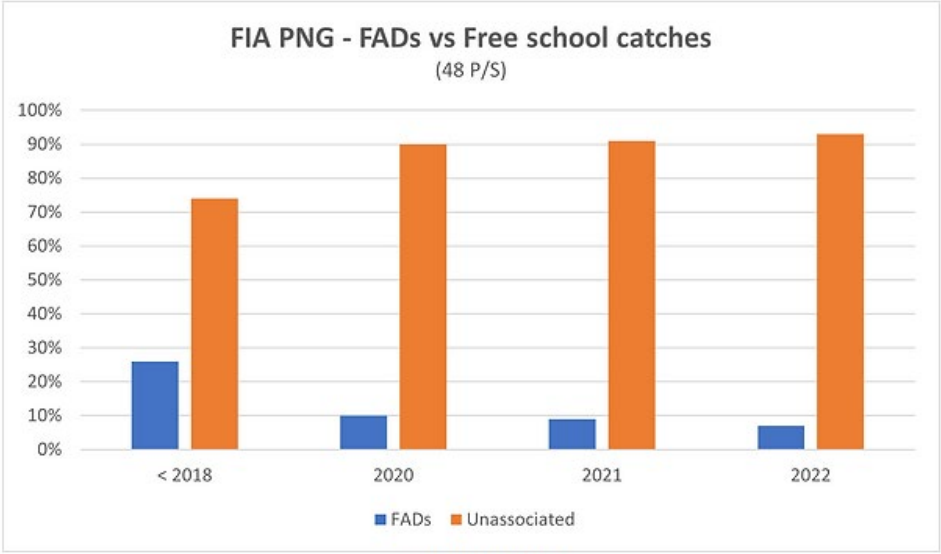
TOTAL DRIFTING FAD DEPLOYED 2022: 199

ANCHORED FADS (aFAD)

Actual FAD quantity deployed by your company

	Fishing Company Names						Type		Material			RSP/GGGI/NFA/ISSF	
Year	Starcki	TSP	TPJ	Frabelle fishing	RD fishing	Bluecatch	Drifting	Anchored	Non biodegradable/ Non organic	Biodegradable and Organic	Mixed	Entangling	No Entangling
2019	0	0	0	0	0	0							
2020	0	0	0	50	0	0		*			*		*
2021	0	0	0	0	0	0							
2022	0	0	0	0	0	0							

TOTAL DRIFTING FAD DEPLOYED 2022: 0

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.**		
		 *Figure 9. FAD vs free school catch in the UoA in recent years.*		
c	**Minor habitat status**			
	Guidepost			There is **evidence** that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where there would be serious or irreversible harm.
	Met?			FADs: N Free school: Y
	Justification	**FADs:** The habitats of the area of the fishery have not been well studied. So, although we would consider it unlikely that the purse seine fishing on FADs or the FADs themselves could cause serious or irreversible harm to the structure and function of any benthic habitats, evidence in support of this is lacking. The requirements of the SG 100 level are therefore not met. **Free school:** there is no possibility that the fishery would routinely contact demersal habitats and no potential for serious or irreversible harm to pelagic habitats (whether minor or not). Evidence is provided from the same sources (VMS, observer records and logbooks). This meets the requirements of the SG 100 level.		
References		Escalle et al. 2018c; Escalle et al. 2021		

OVERALL PERFORMANCE INDICATOR SCORE:	**Score**
CONDITION NUMBER (if relevant): 2-4 *Closed year 2*	*FAD: ~~75~~* ***80***

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.	
~~For sets on FADs: By the fourth surveillance audit provide 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.~~		Free school: 100

PI 3.2.3 – Compliance and Enforcement

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
Scoring Issue		SG 60	SG 80	SG 100
a	MCS implementation			
	Guidepost	Monitoring, control and surveillance **mechanisms** exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance **system** has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A **comprehensive** monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	PNG: Yes Philippines: Yes	PNG: ~~Yes~~ *No* Philippines: Yes	PNG: No Philippines: No
	Justification	In relation to the UoA, the effectiveness of MCS arrangements considered in this Scoring Issue need to be considered at two levels – at the Regional and at national levels for PNG and Philippine. Although the WCPFC develop and set the management and MCS measures, it is up to the PNG and the Philippines to ensure they fully implement and enforce agreed CMMs and domestic management arrangements for vessels flagged to them. **Regional** There is a well-developed MCS system that has demonstrated if applied diligently by Members, can enforce management arrangements. This system is underpinned by the Compliance Monitoring Scheme (CMS) – CMM 2021-03. The purpose of the CMS is to ensure that Members, Cooperating Non-Members and Participating Territories (CCMs) implement and comply with obligations arising under the Convention and CMMs adopted by the Commission. The CMS is designed to: I. assess CCMs' compliance with their WCPFC obligations; II. identify areas in which technical assistance or capacity building may be needed to assist CCMs to attain compliance; III. identify aspects of CMMs which may require refinement or amendment for effective implementation; IV. respond to non-compliance by CCMs through remedial and/or preventative options that include a range of possible responses that take account of the reason for and degree, the severity, consequences and frequency of non-compliance, as may be necessary and appropriate to promote compliance with CMMs and other Commission obligations; and V. monitor and resolve outstanding instances of non-compliance by CCMs with their WCPFC obligations. The annual TCC reports reflect the status of fishery compliance in the WCPFC and the extent to which CCMs not only report, but how well they comply with arrangements. The TCC summary reports publicly identify member compliance (or non- compliance). The FFA is the main service organisation providing MCS support for the coastal States (including PNG) in the WCPO. The arrangements FFA provides are comprehensive and		

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.
		include a regional MCS strategy endorsed by Forum Fisheries Committee Ministers, (covers regional operations and cooperation), a regionally agreed benchmark level of observer coverage and at-sea and in-port inspections. The FFA Surveillance Centre (RFSC) undertakes regional coordination of MCS activity and assesses the risk of non-compliance by vessels. The RFSC monitors fishing vessel activity using a combination of the Vessel Monitoring System (VMS), Automatic Identification System (AIS) and Synthetic Aperture Radar (SAR). MCS arrangements are also supported by the QUAD Operational Working Group. This group comprises the aerial and naval arms of Australia, France, New Zealand and the USA who provide aerial and surface assets to assist regional surveillance. Regional (WCPFC and FFA) MCS systems includes harmonized Terms and Conditions of Access, a regional VMS system, Regional Register of Foreign Fishing Vessels and a range of regional MCS cooperation programmes, including the Niue Treaty (a multilateral treaty of members of the FFA to enhance their ability to enforce effectively their fisheries laws, and deter breaches). **Papua New Guinea** PNG has a comprehensive and integrated MCS system. The Fisheries Management Act 1998 provides extensive MCS provisions, with the issuing of Licences in Part IV, Enforcement and Observer arrangements in Part V, Jurisdiction, Procedure, Offences, Penalties and Liability in Part VI, Administrative Proceedings in Part VII, and Evidence in Part VIII. Division 5 of the National Tuna Fishery Management and Development Plan 2014 provides greater detail on arrangements to combat and eliminate IUU fishing, arrangements for the use and monitoring of VMS and AIS, the Catch Documentation Scheme and research and monitoring arrangements. These legislative and policy provisions are implemented via the integrated Fisheries Information Management System (iFIMS). The iFIMS platform integrates fisheries management, compliance and marketing information. This covers fishing industry reporting of catch, vessel position and activity data generated by VMS as well as fisheries observer reporting. The platform also has an industry database where companies can see their own vessels and catch information, and apply electronically for licenses through a portal. License application information is integrated directly into the system and is automatically delivered to the PNA Office facilitating the operation of the PS VDS. The System is now being used by all PNA members and data related to catch and vessel activity in particular EEZs can be viewed through iFIMS by individual PNA members. The system holds industry, government and flag state information and through various modules it provides catch data to SPC, allows observer managers to manage their observers, including the provision of electronic reports and facilitates the operation of the PS VDS with access to data and reporting needed to manage purse seine fishing in the PNG EEZ, AWs and PNA waters. In addition to the surveillance services provided by the FFA which provides risk assessments, VMS monitoring and annual coordinated operations, there are comprehensive MCS measures in place in the fishery domestically. Before considering the licensing of a vessel, it must be in good standing on the FFA Register, have a full inspection by a fisheries officer and have completed a vessel safety inspection. Subject to meeting these requirements and payment of any necessary fees, a licence will be issued. Once the licence has been issued, vessel days can then be purchased. All vessels are subject to a pre-inspection before fishing can commence. All vessels in the UoA are also subject to 100 per cent observer coverage. PNG currently has 361 observers of which 193 are MSC certified.

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.
		The CDS unit (also part of iFIMS) monitors all domestic and foreign landings and all transhipments via MoUs with the Philippines and Thailand where the product is landed in those countries. Where foreign flagged vessels land product in PNG, catch/landing information is provided to the flag State. Seventy-two hours' notice is required prior to port entry and a comprehensive process is undertaken cross checking the vessel, it's movements (via VMS track) and any highlighted issues including its assessed risk. The port entry/exit process has seven parts; 1 Arrival Notification; 2 Intelligence Analysis and Risk Determination, 3 Recommended Boarding Investigation, 4 Other Boarding verifications, 5 Boarding Party and authorisations, 6 CDS monitoring, and 7. Departure Clearance. *Nevertheless, during the second surveillance audit it became apparent that while monitoring, control and surveillance do exist, such as the observer program, the VMS, license agreements and catch documentation schemes, there is insufficient evidence to maintain the finding PNG demonstrates an ability to enforce relevant management measures particularly as they relate to Principle 2 for the UoA. Areas where additional evidence is required include: (a) addressing the backlog of compliance cases under investigation (b) ensuring WCPFC CMMs are expediently gazetted so that all vessels operating in PNG fisheries waters, irrespective of flag state, are required to comply with the most recent and active CMMs. (c) Clarify understanding and application of CMMs. For example, explanations provided to the auditors about compliance matters associated with setting on cetaceans indicate a lack clarity about applicability of CMM 2011-03 and does not provide a demonstrated ability to enforce some of the management measures* **Philippines** Key national MCS programs and related initiatives include (NTMP 2018): ▪ Data collection policy (log sheets, landing declarations, port sampling, and observers) ○ Expanded data collection for tuna in municipal waters ○ Catch logbook requirements for all vessels ○ Stowage plans for carrier vessel ○ landing reports ○ 100% Observer coverage for vessels in the high seas and other coastal states; training of 464 Observers and 90 debriefers. ▪ Traceability ○ BAC 251 Series of 2014 - Traceability system for fish and fishery products ○ Implementation of Electronic Catch Documentation and Traceability System (eCDTS). ▪ Catch certification ○ FAO 238, Series of 2012 – Rules and regulations Governing the implementation of Council Regulation EC No. 1005/2008 on the Catch Certification Scheme ▪ Inspections ○ FAO 227 Series of 2008 – Rule and regulations governing the export of fish and aquatic products to European Union member-countries ○ FAO 228 Series of 2008 - Rules governing the organization and implementation of official controls on fishery and aquatic products intended for export to the EU market for human consumption

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.
		○ National Plan of Control and Inspection (NPCI) ▪ Enforcement ○ SO 486 dated July 15, 2011 and FOO 241 dated July 18, 2011 – Cr eating the BFAR Fishery Resources Protection and law Enforcement Section. ○ Acquisition of multi-mission patrol vessels; ○ Appointment of 778 Fishery Regulatory Officers; ○ Training of 343 Law Enforcement Officers ▪ Adjudication of administrative penalties ○ Establishment of Adjudication Committees to administer the administrative penalties systems at the national and regional levels effective 2017 ○ Hiring of hearing officers and legal assistants ○ Conduct of capacity-building for hearing officers ○ Investigation of 218 cases (2017) and resolution of 184 cases (2017) ○ Increased collection of fines and penalties Over the last decade the Philippines has improved its national Monitoring, Control and Surveillance systems (PEMSEA. 2018). Although operational challenges remain for municipal fisheries, 100% observer coverage in the industrial purse seine fleet operating beyond the Philippine EEZ combined with a comprehensive administrative penalty regime and sanctions outlined in various Fisheries Administrative Orders have meant that the Philippines are now generally compliant and are investigating alleged CMM violations with WCPFC CMMs by their flagged vessels. Scoring summary In summary, at the regional and national PNG and Philippines levels: ▪ SG 60 is met for the Philippines and PNG since monitoring, control and surveillance mechanisms exist, and are implemented in the fishery and there is a reasonable expectation that they are effective. ▪ ~~SG 80 is met because 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.~~ ▪ SG 80 is met for the Philippines because 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. ▪ *SG 80 is not met for the PNG because while a monitoring, control and surveillance system has been implemented in the fishery there is insufficient evidence to demonstrate an ability to enforce relevant management measures, strategies and/or rules.*

<table>
<tr><td colspan="2">PI 3.2.3</td><td colspan="3">Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.</td></tr>
<tr><td></td><td></td><td colspan="3">▪ SG 100 is not met because there is insufficient evidence for PNG and the Philippines comprehensive monitoring, control and surveillance systems have been implemented in the fishery and has demonstrated a consistent (our emphasis) ability to enforce relevant management measures, strategies and/or rules.</td></tr>
<tr><td rowspan="4">b</td><td colspan="4">Sanctions</td></tr>
<tr><td>Guidepost</td><td>Sanctions to deal with non-compliance exist and there is some evidence that they are applied.</td><td>Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.</td><td>Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.</td></tr>
<tr><td>Met?</td><td>PNG: Yes

Philippines: Yes</td><td>PNG: ~~Yes~~ No

Philippines: No</td><td>PNG: No

Philippines: No</td></tr>
<tr><td>Justification</td><td colspan="3">Although regional RFMOs provide the framework for the management of highly fishstocks and require compliance with CMMs (by contacting parties, it is the flag state that must develop sanctions and consistently apply them to deter illegal activities. Here PNG and the Philippines are the flag state and this SG is primarily assessed against Flag State sanctions and their effectiveness.

Regional

The WCPFC Compliance Monitoring Scheme (CMS), as part of the TCC processes, is relevant to performance against this scoring issue. The TCC discusses compliance issues based on available information on infringements from observers and other sources. These discussions are held in closed session. Responses to infringements are considered at the TCC and reported to the Commission in the Compliance Monitoring Summary Report. This report provides a reporting matrix describing compliance with CMMs by CCMs. Additional detail on the compliance status of each flag State has been added in recent years. The annual compliance summary report still does not provide information on outcomes of investigations by flag state agencies into non-compliance, nor specific cases, such that a reader may judge whether non-compliance is dealt with consistently or deterred appropriately. The CMS is not a sanctioning tool but provides information on non-compliance and may provide some deterrence in so far as flag States would not wish to be rated non-compliant or priority non-compliance over time.

The other significant tool directly available to the WCPFC is the IUU Vessel list, which is aimed at vessels presumed to have carried out IUU fishing. Where IUU fishing is detected, flag States are notified and asked to take appropriate enforcement action, including ensuring that the vessel leaves the Convention area. At present, there are three vessels on the IUU Vessel list.

MRAG (2021) quantified IUU fishing activity in the WCPO. They concluded that the MCS measures that have been implemented cooperatively implemented by WCPFC CCMSs over recent decades, including sanctions have strengthened the MCS environment across all member zones compared to individual members acting alone. The relatively low estimates of IUU activity in the region compared to many other parts of the world is practical evidence of the MCS framework's success.</td></tr>
</table>

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

Pacific Island States

Although the Regional organizations set up conditions, general policies, capacity building operational support for Monitoring, Control and Surveillance (MCS) activities in the WCPO tuna fishery, none of these organizations has enforcement capacity *per se* and therefore rely on coastal and flag state enforcement actions.

Pacific Island coastal states have a legislative basis for boarding, inspection, and arrest of foreign fishing vessels and for imposing sanctions on foreign fishing offences in their EEZs. These are summarized in the tables below.

State	Foreign Fishing Regulation	Board & inspect	Seize & arrest vessel
FSM	24 FSM Code §§603, 806.	X	X
Kiribati	Act 2010 ss 23, 30.	X	X
Marshall Islands	51 MIRC §§512, 566; Regs 1998 s 17.	X	X
Nauru	Act 1997 ss 12B(2), 17, 21	X	X
Niue	Act 1996 ss 39, 48	X	X
Palau	27 PNC §188	X	X
PNG	Act 1998 ss 49, 61(4); Reg 2000 s 12	X	X
Solomon Islands	Act 2016 ss 51– 5, 57.	X	
Tokelau	Act 1977 s 12; Regs 2012 ss 40, 41	X	X
Tuvalu	Act 2006 ss 47, 92	X	X

Adapted from Goodman, C., (2021) Table 6.1

State	Foreign Fishing Regulation	Jail	Penalties	Fines for unauthorized foreign fishing (USD)
FSM	24 FSM Code §§901, 907		X	$100,000– 1 million
Kiribati	Act 2010 ss 8, 29, 42– 3	X	X	$38,500– 772,000 (plus costs of arrest and prosecution)
Marshall Islands	51 MIRC §§425, 530		X	$100,000– 1 million
Nauru	Act 1997 ss 23, 33– 5		X	Up to $772,000 (plus costs of loss or damage and prosecution
Niue	Act 1996 ss 18, 51		X	Up to $500,000

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

Palau	27 PNC §§181– 2, 203, 207	X	X	500,000– 1 million; or purse seine vessel $1 million– 10 million (plus costs of restoration, replacement, compensation and 'response')
PNG	Act 1998 ss 46, 58, 62; Reg 2000 Schedule 2	X	X	2,260– 226,000*; or purse seine vessel $56,500– 564,500* (plus costs of seizure and prosecution)
Solomon Islands	Act 2015 ss 37, 95, 103, Schedule 1	X	X	Up to $1.494 million
Tokelau	Regs 2012 ss 37, 44, 45		X	Up to $72,000
Tuvalu	Act 2006 ss 13, 92		X	Not less than $3 million

Adapted from Goodman, C., (2021) Table 6.2

Papua New Guinea

Part VI of the PNG Fisheries Management Act 1998 deals with Jurisdiction, Procedure, offences, Penalties and Liabilities. Section 57 (1) of the Act provides that:

"An offence against this Act shall be prosecuted summarily before a Principal Magistrate, except where administrative proceedings are taken in accordance with Part VII."

Section 58 of the Act provides a comprehensive list of offences, penalties and costs which are identified and can be applied under the Act.

Part VII of the Act sets up arrangements for the use of Administrative Proceedings and provides for the establishment of an Administrative Panel. The use of Administrative Proceedings is determined by the NFA Managing Director subject to the consent of the Public Prosecutor.

NFA provided the following summary information in relation to Infringements recorded for the period 2017-2019.

Vessel Infringement Record for 2017 to 2019 period. Updated 31st May 2019			
Investigation Status	No.		Penalty Fees
			(PGK)
Active - pending Evidence Assessment process	8		
Pending investigations	16		
Complete	13		
Complete by Statuses	Status of Complete investigations		

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

	Closed due to insufficient evidence	24	
	Complete by warning notices served	8	
	Complete by penalty notice	5	610,000.00
Total vessel infringements: 37			610,000.00

Source NFA.

Note: Total of 37 vessel infringements were processed during 2017 to 2019 period.

Penalty Fees Data is incomplete for the complete cases.

No cases dealt with through court proceedings for the above period.

More detail on the offences identified and investigated is provided below:

- Obstruction, abuse or bribery of an observer or use of a foreign observer;
- Missing observer;
- Misreporting of catch;
- Non safe release of bycatch;
- Interactions with dolphins, sharks or whales;
- Fishing on a FAD during closed period;
- Shark fishing;
- Fishing inside 12nm or in a closed area;
- Providing false information to a Fisheries Officer; and
- Bunkering at sea.

All these infringements have been dealt with via Part VII of the Act dealing with Administrative Proceedings and none have been the subject of court proceedings.

NFA reported 18 cases for 2020 and 20 cases for 2021 totalling 38 cases. Most are related to interactions with sharks & cetaceans. NFA reports that some 80% are regarded as false positives, *meaning the sharks & cetaceans were interacted with and discarded alive which NFA most often does not constitute an offence unless proven otherwise. Sanctions exist, but because investigation process is backlogged and evidence is often insufficient to apply an administrative penalty, existing sanctions can be no longer be considered to provide an 'effective deterrence."*

Philippines

Under Fisheries Administrative Order 252 of 2019: Amended Rules and Regulations Governing Distant-Water Fishing by Philippine flagged vessel, a range of sanctions can be applied to Philippine purse seine vessels operating in the EEZ of other nations. These include significant fines. The NTMP (2018) provides evidence that sanctions are applied via Adjudication Panels. However, there is no evidence of sanctions being applied consistently

<table>
<tr><td colspan="2">PI 3.2.3</td><td colspan="3">Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.</td></tr>
<tr><td></td><td></td><td colspan="3">against distant water Philippine flagged purse-seine vessels for non-compliance with CMMs and BFAR FAOs.

Scoring summary

~~For PNG:~~

▪ ~~SG 60 is met since sanctions to deal with non-compliance exist and there is some evidence that they are applied~~

▪ ~~SG 80 is met since sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.~~
▪ ~~SG 100 is not met since while sanctions to deal with non-compliance exist and are consistently applied, there is insufficient evidence to conclude they demonstrably provide effective deterrence~~

~~For the Philippines:~~

▪ ~~SG 60 is met since sanctions to deal with non-compliance exist and there is some evidence that they are applied.~~

▪ ~~SG 80 is not met since while sanctions to deal with non-compliance exist, there is insufficient evidence to conclude that they are consistently applied and thought to provide effective deterrence.~~

~~SG 100 is not met since while sanctions to deal with non-compliance exist there is insufficient evidence to conclude that they are consistently applied and/or that they demonstrably provide effective deterrence.~~

For PNG and the Philippines:

▪ SG 60 is met since sanctions to deal with non-compliance exist and there is some evidence that they are applied.

▪ SG 80 is not met since while sanctions to deal with non-compliance exist, there is insufficient evidence to conclude that they are consistently applied and are therefore not thought to provide effective deterrence.
▪ SG 100 is not met since while sanctions to deal with non-compliance exist and are consistently applied, there is insufficient evidence to conclude they demonstrably provide effective deterrence.</td></tr>
<tr><td>c</td><td colspan="4">Compliance</td></tr>
<tr><td></td><td>Guidepost</td><td>Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.</td><td>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.</td><td>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.</td></tr>
<tr><td></td><td>Met?</td><td>PNG: Yes</td><td>PNG: Yes</td><td>PNG: No</td></tr>
</table>

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.		
		Philippines: Yes	Philippines: Yes	Philippines: No
	Justification	Regional WCPFC Members are bound to implement all WCPFC CMMs. Any detected non-compliance with these arrangements is reported in National Part 2 Country Reports and annually assessed by the TCC. CCMs performance in this regard is reported in the Compliance Monitoring Report and available to the Commission. Overall, fishers comply with the management system, including providing necessary supporting information. The WCPFC has a comprehensive MCS system in place supported by at-sea compliance monitoring and very high levels of coverage by trained scientific observers. This is recognised as contributing to generally strong compliance outcomes and improving the quality of both catch and effort and ecosystem related data collection. The MCS system also requires that logbook and other data be supplied as part of licence requirements. The TCC reports, observer reports, logbook and other data requirements and regional MCS operations coordinated by FFA, provide reliable evidence that there is compliance with the management system. For example, in August 2017, Operation Island Chief ran as a ten-day operation involving 10 participating FFA member nations - Fiji, FSM, Kiribati, Palau, PNG, Nauru, the Marshall Islands, the Solomon Islands, Tuvalu, and Vanuatu. Some 117 at sea and in-port vessel boarding's were undertaken with infringements involving four vessels (three flagged to China and one to Chinese Taipei) were detected. The infringements involved non-reporting or misreporting of information and are reported as such in the annual WCPFC Compliance Summary. MRAG (2021) quantified IUU fishing activity across four categories: (i) unlicensed/unauthorized fishing, (ii) misreporting, (iii) non-compliance with other license conditions and (iv) post-harvest risks. They concluded the IUU volume figure is approximately 6.5% of the total WCPFC Convention Area catch in 2019. Misreporting, mostly in the purse seine fishery accounted for 89% of the total IUU volume. Challenges exist in making accurate estimates of catch at sea, though a relatively low percentage of total catch, this does not allow us to conclude 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. Papua New Guinea The overall MCS arrangements described in PI 3.2.3 SIa provide a broad overview of the thorough systems in place to ensure fishers comply with the management system. The comprehensive nature of the MCS arrangements, supported by the iFIMS with its extensive individual modules provides a high degree of confidence that fishers are complying with management arrangements. The iFIMS platform integrates fisheries management, compliance and marketing information. It covers catch reporting, vessel position and activity data generated by VMS, as well as real time fisheries observer reporting. The system holds industry, government and flag State information and through various modules. It provides catch data to SPC, allows observer managers to manage observers, a range of electronic reports and facilitates the operation of the PS VDS with access to data and reporting needed to manage purse seine fishing in the PNG EEZ, AWs and PNA waters. This combined with 100 per cent observer coverage indicates that there is limited scope for non-compliance and hence confidence that fishers are generally complying with management arrangements.		

<table>
<tr><td colspan="2">PI 3.2.3</td><td colspan="3">Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.</td></tr>
<tr><td></td><td></td><td colspan="3">However there was evidence that that while FAD numbers limits had been set, the arrangements were not being enforced, nor were all reporting requirements being met.

Philippines

The Philippines are fully compliant with reporting scientific and operational (catch and effort) fishing data to the WCPFC, recognizing that improvements are required in the reporting of data from municipal tuna fisheries.

There is 100% observer coverage in the industrial purse seine fleet operating beyond the Philippine EEZ combined with a comprehensive administrative penalty regime and sanctions outlined in Fisheries Administrative Orders have meant that the Philippines vessels are now generally compliant. BFAR are investigating some alleged violations of WCPFC CMMs by their flagged vessels. Nevertheless, a review of the WCPFC CMR Part A report for 2021 suggests that the Philippines are behind other CCMs when it comes to investigating and prosecuting potential violations of CMMs.

Scoring summary

For PNG and the Philippines

▪ SG60 is met for the Philippines and PNG because there is evidence to show that fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.
▪ SG 80 is met for the Philippines and PNG because 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.
▪ SG100 is not met for the Philippines and PNG since it cannot be concluded 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.</td></tr>
<tr><td>d</td><td colspan="4">Systematic non-compliance</td></tr>
<tr><td></td><td>Guidepost</td><td></td><td>There is no evidence of systematic non-compliance.</td><td></td></tr>
<tr><td></td><td>Met?</td><td></td><td>PNG: Yes

Philippines: No</td><td></td></tr>
<tr><td></td><td>Justification</td><td colspan="3">Regional

There is no evidence of systematic non-compliance (MRAG 2021). The final CMR report tabled at WCPFC 17 in December 2020 identifies that some non-compliance occurs and that the range of offences varies from minor (such as late submissions of reports) to more serious issues, such as not complying with the conditions of unauthorized fishing have occurred.

Papua New Guinea</td></tr>
</table>

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.
		It is noted that even in well-managed and resourced domestic fisheries, with effective MCS systems in place, some non-compliance will occur. However, the information presented in PI 3.2.3 SIa-SIc suggests that there is no evidence of systematic non-compliance. Philippines The information presented in PI 3.2.3 SIa-SIc means that systematic non-compliance by Philippine flagged vessels in the UOA with WCPFC CMMS cannot be discounted. The final Compliance Monitoring Report tabled at WCPFC 18 (2021) identifies the areas of non-compliance CMMs by Philippine flagged vessels especially: ▪ CMM 2014-02 para 9a relating to VMS operation. The confidentiality of information in Philippine adjudication process to determine administrative penalties and the failure of BFAR to begin investigation proceedings against potential breaches of CMMs reduces the ability to determine whether non-compliance is systematic in the UOA or whether levels of non-compliance are at levels consistent with other CCMs. The 2021 report on Scientific Data Available to the WCPFC indicated that Philippines was ranked Tier III and was fully compliant in providing scientific information to the WCPFC. Scoring summary: ▪ For PNG, SG 80 is met because there is no evidence of systematic non-compliance. ▪ For the Philippines, SG 80 is not met because there is insufficient information to determine that there is no evidence of systematic non-compliance
References		Banks et al. 2011; Medley et al. 2022; MRAG 2021; WCPFC TCC minutes; BFAR NTMP 2018; WCPFC Final Compliance Monitoring Reports; WCPFC CMM 2018-07; FFA MCS arrangements; Niue Treaty; PNG Fisheries Management Act 1998; NFA.

Draft scoring range	PNG ≥80 Philippines 60-79
Information gap indicator	Information is insufficient to score PI. Additional information is required during the site visit on the compliance record of Philippine flagged vessels in the UoA
Overall Performance Indicator scores added from Client and Peer Review Draft Report	
Overall Performance Indicator score	PNG: ~~80~~ 70 Philippines: 70
Condition number (if relevant)	3-4 3-5 3-6 (new) By the first surveillance audit following recertification, provide evidence that 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

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with.	
		3-7 (new) By the first surveillance audit following recertification, provide evidence that sanctions to deal with non-compliance exist, **are consistently applied** and are providing effective deterrence

3.3 Conditions

3.3.1 Progress Against Conditions

3.3.2 Condition 2-1 (PI 2.3.1) – Closed in Year 1 Surveillance

Performance Indicator	PI 2.3.1b. Direct effects of the UoA are highly likely to not hinder recovery of ETP species	
Score	PI 2.3.1 – FADS: 75 PI 2.3.1 – Free school: 75	
Justification	See rationale of PI 2.3.1b	
Condition	2-1 (PI 2.3.1) -FAD sets and Free school sets: By the fourth surveillance audit provide evidence that the direct effects of the UoA are highly likely to not hinder recovery of Cetacean species	
Milestone Year 1	Surveillance (2021 2022): develop and provide a plan to demonstrate the effective implementation of measures to avoid setting on whale sharks and cetaceans in the fishery. Expected score: 75	
Client Action Plan	Activities:	PNG FIA will actively support work towards the development and adoption of a ETP species management strategy that enable adequate information availability for period of three years to measure trends and manage fishing impacts on ETP species and ETP bycatch levels to remain at acceptable level. PNG FIA will lead in efforts to co-organize with NFA on country level work (ie management plan reviews) and also with other key stakeholders to progress and drive actions in response to identified ETP strategy and the suggested approach in the fisheries management and development in the PNG. PNG FIA or industry Participation in Fisheries Management The National Tuna Management & Development Plan has sub-technical advisory committee which includes representative of industry. Accordingly, PNG FIA will work through the industry representative in the committee to encourage, motivate and ensure committee meetings are convened and workplans developed and progress respective actions related to this subject condition. FIA representative on the National Fisheries Board will encourage, motivate and ensure Board meetings give advice and direction to NFA workplans and ETP

		strategy developed and respective actions related to this subject condition progressed with target schedules. Year 1-2 Actions: FIA will assist NFA and co-organise in 2020 for a NFA-Industry consultation meeting to have a ByCatch Mitigation information and reporting GAP analysis. co-organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy. Undertake a workplan to review by-catch logsheet reporting and observer data on milestone year 2. develop a draft ETP species management strategy adopt and implement the ETP management strategy provide evidence at the 1-2 annual surveillance audits that the amount of processed data available has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years. Co-organize with NFA that there is 100% observer coverage and reporting also covers ETP strategy on the tuna purse seine fleet. PNG FIA fleet vessels are registered in the regional vessel register.
	Expected outcome Year 1:	Bycatch mitigation workshop and training conducted Reporting protocols reviewed and GAP analysis undertaken ETP Management Strategy developed and initiated adopted Shark National Plan of Action (NPOA) workplan developed. workplan to review by-catch logsheet reporting and observer data on milestone year 2 established and implemented. Meeting records and reports
	Responsible Party/ies:	Action Lead FIA will: co-organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy support NFA to develop a draft ETP species management strategy support, encourage and motivate NFA to adopt and implement the ETP management strategy provide evidence at the surveillance audits that the amount of processed data available to assess whale sharks and cetaceans interactions has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years. Co-organize with NFA that there is 100% observer coverage and reporting also covers ETP strategy on the tuna purse seine fleet.

		Will ensure PNG FIA fleet vessels are registered in the regional vessel register. Support NFA in facilitating and coordinating the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. Support NFA in coordinating the NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input in regards to this condition is rendered. Partner Support NFA will: organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy develop a draft ETP species management strategy adopt the ETP management strategy provide evidence at the 1-2 annual surveillance audits that the amount of processed data available has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years. Ensure 100% observer coverage on PNG FIA fleet and reporting also covers ETP strategy requirements on the PNG FIA tuna purse seine fleet. Ensure PNG FIA fleet vessels are registered in the regional vessel register. Facilitate and coordinate the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. Coordinate the NFA/Industry consultation Will encourage the active participation of PNG FIA in WCPFC meetings as part of the PNG delegations oversee and coordinate the participation of multi-stakeholders in the consultation on this condition
Milestone Year 2	Surveillance (2022 2023): provide information on the factors contributing to the setting of purse seines on whale sharks and cetaceans in the fishery and options to reduce their frequency. Expected score: 75	
Client Action Plan	Activities:	Year 1-2 Actions: implementation of the ETP management strategy Develop a workplan for establishing historical interaction levels of whale sharks and cetaceans for more than three years of information prior to 2020 to measure trends that support the strategy to manage interactions and impacts with vulnerable sharks and cetacean.

		Undertake a workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed. NFA has agreed to provide the necessary support to ensure continued 100% observer coverage of PNG FIA tuna purse seine vessels, as in place previous years. PNG FIA fleet to improve its logsheet report in line with NFA work to improve the processing of observer data into useful data sets. The problems of the initial years identified are being overcome, and PNG FIA will present interaction data on whale shark & cetacean (improved narrative of environment and situation of setting that had an interaction with whale sharks and cetaceans) from a minimum of 50% of the all sets. PNG FIA will ensure that the available data are representative of the entire Unit of Assessment (UoA). PNG FIA actively collaborates with research centres (SPC, WCPFC and ENGOs) in using the available data. This includes ensuring updated catch data tables reported in compliance report to SC and TCC. PNG FIA will ensure fleet reporting will continue the monitoring of catch and by-catch. The data provided will allow a better understanding of the status and trends of retained species. This includes development of a skipper handbook on ETP reporting and training awareness on the handbook conducted. PNG FIA coordinates with NFA on reviews and assessments to ensure NFA observers will continue the monitoring of catch and by-catch by all FIA vessels. The data provided will allow a better understanding of the status and trends of retained species. This includes review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. PNG FIA will co-organize with NFA to survey bycatch and discards in sufficient detail (species, sex, capture location, size and fate) to allow quantification of total catch, species composition and vulnerable species interacting with the fishery. PNG FIA will continue to record the by-catch of vulnerable species bycatch and report all catches as per WCPFC Resolution and bycatch reporting protocols. PNG to inform of its country level workplan to SC and TCC. And work with the subregional groups to make recommendations at the SC to progress work in addressing this issue. Develop a workplan for technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery.
	Expected outcome Year 2:	ETP Management Strategy adopted and implemented Shark National Plan of Action (NPOA) developed and adopted. Skipper handbook in handling whale shark and Cetaceans developed. workplan to review by-catch logsheet reporting and observer data on milestone year 1 established and implemented.

		Establishment of historical interaction levels (at least past 3 years) of whale sharks and cetacean recorded a workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed analysis of interaction data and information collection system provides good basis in guiding the operational strategies to reduce frequency of interaction with whale sharks and cetaceans ensuring updated catch data tables reported in compliance report to SC and TCC reviews and assessments undertaken -NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. Including survey of bycatch and discards details (species, sex, capture location, size and fate). SPC receives the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet Workplan developed for technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. By-Catch Mitigation information and reporting. Meeting Minutes
	Responsible Party/ies:	Action Lead FIA will: support and assist NFA in the development of ETP Management Strategy adopted and implemented ensure the ETP Management Strategy is implemented by FIA fleet support NFA in development of the Shark National Plan of Action (NPOA). Ensure awareness and training of the Skipper handbook in handling whale shark and Cetaceans used by FIA fleet. Support and co-organise with NFA the development of a workplan to review by-catch logsheet reporting and observer data on milestone year 2 established. Support NFA in the development of a workplan for establishing base line reference and target Support and co-organize a workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed Provide evidence to the fourth annual surveillance audit that the processed data available for the previous years are adequate ensuring updated catch data tables reported by NFA in compliance report to SC and TCC

		support and co-organize the review and assessment on NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. FIA will undertake a survey of bycatch and discards details (species, sex, capture location, size and fate). Will ensure SPC receives the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet Assist and co-organize with NFA a technical assessment on one or more options be tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. Support and co-organise with NFA to review the ETP Management Strategy. Support and co-organize with NFA to review the National Tuna Development & Management Plan(NTDMP) Support NFA in coordinating the NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input in regards to this condition is rendered. Partner Support NFA will: Ensure the ETP Management Strategy is adopted and implemented ensure the ETP Management Strategy is implemented by FIA fleet develop the Shark National Plan of Action (NPOA). Undertake awareness and training of the Skipper handbook in handling whale shark and Cetaceans and is used by FIA fleet. Develop a workplan to review by-catch logsheet reporting and observer data on milestone year 1 established. develop a workplan for establishing base line reference and target develop a workplan for technical assessment on one or more options be tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. develop a workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed Provide evidence to the fourth annual surveillance audit that the processed data available for the previous years are adequate Provide updated catch data tables in compliance report to SC and TCC review and assess NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans.

		Undertake a survey of bycatch and discards details (species, sex, capture location, size and fate). Provide SPC the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet Coordinate the NFA/Industry consultation Will encourage the active participation of PNG FIA in regional meetings as part of the PNG delegations oversee and coordinate the participation of multi-stakeholders in the consultation on this condition
Milestone Year 3	Surveillance (2023 2024): provide some evidence that one or more options have been tested and proved effective in increasing the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. Expected score: 75	
Client Action Plan	Activities:	Year 1-3 Actions: ETP Management Strategy is implemented and enforced by NFA ETP Management Strategy is implemented by FIA fleet Shark National Plan of Action (NPOA) is implemented. Awareness and training of the Skipper handbook in handling whale shark and Cetaceans and is used by FIA fleet ongoing. Develop a workplan to review by-catch logsheet reporting and observer data per outcomes and recommendations of surveillance audits. provide evidence that the 1-2 annual surveillance audits recommendations are implemented to demonstrate that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. establishing base line reference and target Implement the workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed Assess outcomes of the review of NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. Refine and update reporting requirement as per the recommendation of the survey of bycatch and discards details (species, sex, capture location, size and fate). Provide SPC the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet Implement 100% observer coverage on PNG FIA fleet and reporting of ETP strategy requirements by the PNG FIA tuna purse seine fleet is satisfactory.

		Updated catch data tables from at a minimum of 50% of the total sets for years 1-3 Undertake technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. Coordinate the NFA/Industry consultation and also multi-stakeholders consultation on the milestone. Provide updated catch data tables in compliance report to SC and TCC
	Expected outcome Year 3:	Technical report of assessment on tests on effectiveness of mitigation measures presented at NFA/Industry annual consultation PNG to inform outcome report to SC and TCC. And work with the subregional groups to make recommendations at the SC16 to progress work in addressing this PI. Compliance Monitoring Reports circulated for public information. Independent scientific body verification of the technical report of assessment on tests of options SC advice on the technical assessment on tests
	Responsible Party/ies:	Lead Party FIA will: Ensure the ETP Management Strategy is implemented by FIA fleet Ensure the Shark National Plan of Action (NPOA) is implemented. Co-organize with NFA the awareness and training in use of the Skipper handbook in handling whale shark and Cetaceans and is used by FIA fleet. Co-organise with NFA to develop a workplan to review by-catch logsheet reporting and observer data as per outcomes and recommendations of previous surveillance audits. provide evidence that the 1-2 annual surveillance audits recommendations are implemented to demonstrate that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. Support NFA in delivering the workplan to establish a base line reference and target Assist and cooperate with NFA to undertake technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. Implement the workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed Assess outcomes of the review of NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans.

		Refine and update reporting requirement as per the recommendation of the survey of bycatch and discards details (species, sex, capture location,o size and fate). Provide SPC the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet Undertake a technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. Implement 100% observer coverage on PNG FIA fleet and reporting of ETP strategy requirements by the PNG FIA tuna purse seine fleet is satisfactory. Support NFA to coordinate the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. Coordinate the NFA/Industry consultation and also multi-stakeholders consultation on the milestone. Provide updated catch data tables in compliance report to SC and TCC Support Party NFA will: ETP Management Strategy is implemented and enforced by NFA ETP Management Strategy is implemented by FIA fleet Shark National Plan of Action (NPOA) is implemented. Awareness and training of the Skipper handbook in handling whale shark and Cetaceans and is used by FIA fleet ongoing. Develop a workplan to review by-catch logsheet reporting and observer data per outcomes and recommendations of surveillance audits. Undertake technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. provide evidence that the 1-2 annual surveillance audits recommendations are implemented to demonstrate that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. Implement the workplan for establishing base line reference and target Implement the workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed Assess outcomes of the review of NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans.

		Refine and update reporting requirement as per the recommendation of the survey of bycatch and discards details (species, sex, capture location, size and fate). Provide SPC the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet Undertake a technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. Implement 100% observer coverage on PNG FIA fleet and reporting of ETP strategy requirements by the PNG FIA tuna purse seine fleet is satisfactory. Facilitate and coordinate the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. Coordinate the NFA/Industry consultation and also multi-stakeholders consultation on the milestone. Provide updated catch data tables in compliance report to SC and TCC
Milestone Year 4	Surveillance (2024 2025): provide some evidence that the measures/strategies for whale sharks and cetaceans are being implemented successfully for the whole fishery. Proposed score 80. Expected score: 80	
Client Action Plan	Activities:	PNG FIA will provide evidence to the fourth annual surveillance audit that the processed data available for the previous years are adequate to measure trends and support a strategy to manage impacts of the fishery on ETP species. Actions: Analysis of data made available for the last three years to measure trends that support the ETP strategy to manage impacts on ETP species and ensure that ETP bycatch levels remain at target levels. Updated catch data tables from at a minimum of 80% of the total sets for years 1-4 provide evidence that the 1-3 annual surveillance audits recommendations are implemented to demonstrate that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. SPC requested to provide analysis of the data provided in the last three years to profile the compliance with the good practice code of PNG FIA fleet. Report and discuss at NTMDP technical advisory committee meeting the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. Report and discuss at NFA/Industry meeting the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. Report and discuss at SC and TCC meeting the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery

		review the ETP Management Strategy and refine GAPs identified. Undertake a review of the surveillance audit 1-4 recommendations, measures and strategies in place to confirm implementation of ETP Management Strategy is working towards meeting measures objectives review the National Tuna Development & Management Plan(NTDMP), if required.
	Expected outcome Year 4:	Analysis of data made available for the last three years undertaken and circulated and discussions held that measure trends that the ETP strategy is managing impacts on ETP species and ensuring ETP bycatch levels remain at target levels Demonstrated evidence that the 1-3 annual surveillance audits recommendations are implemented and have proven that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. SPC undertaken analysis of the data provided in the last three years and profile the compliance with the good practice code of PNG FIA fleet. NTMDP technical advisory committee considers and adopts one or more options tested and proven as effective measure(s) to mitigate setting on whale sharks and cetaceans in the fishery. NFA/Industry meeting convened and the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery is discussed. SC and TCC meeting noted the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery as reported in Compliance report ETP Management Strategy reviewed and GAPs identified refined. National Tuna Development & Management Plan(NTDMP) is reviewed, if required. Providence of Compliance Reports, Stock Assessment Reports
	Responsible Party/ies:	Action Lead FIA will: Seek analysis of data made available for the last three years undertaken and circulated and discussions held that measure trends that the ETP strategy is managing impacts on ETP species and ensuring ETP bycatch levels remain at target levels Demonstrated evidence that the 1-3 annual surveillance audits recommendations are implemented and have proven that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years.

		Seek technical assistance for analysis of the data provided in the last three years and profiling of the compliance with the good practice code of PNG FIA fleet. Coordinate with NFA to convene the NTMDP technical advisory committee to discuss the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery and develop further work program as required. Co-organise with NFA a NFA/Industry consultation meeting be convened and the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery is discussed. Coordinate and support NFA to provide input into the Compliance report to SC and TCC on the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. Support NFA to plan and coordinate the review of ETP Management Strategy and refinement of GAPs identified. Support NFA to plan and coordinate the review of National Tuna Development & Management Plan(NTDMP), if required. Action Partners NFA will: Analyse the data made available for the last three years undertaken and circulated and discussions held that measure trends that the ETP strategy is managing impacts on ETP species and ensuring ETP bycatch levels remain at target levels Demonstrated evidence that the 1-3 annual surveillance audits recommendations are implemented and have proven that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. Analyse the data provided in the last three years and profile the compliance with the good practice code of PNG FIA fleet. Convene the NTMDP technical advisory committee to discuss the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery and develop further work program as required. Convene a NFA/Industry consultation and discuss the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. Undertake Compliance report to SC and TCC on the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. Review of ETP Management Strategy and refinement of GAPs identified.

		Review of National Tuna Development & Management Plan(NTDMP), if required.
Consultation on condition	Letters of support from NFA in relation with action plan	
Progress on Condition (Year 1)	The assessment team reviewed more recent observer data and evaluated the outcome PI for cetaceans more specifically at the species level and determined that the 80 level was met for PI 2.3.1 SI b This condition was closed, please refer to the Section 3.2 Re-scoring Performance Indicators	
Status	Closed	
Additional information		

3.3.3 Condition 2-2 (PI 2.3.2)- Whale sharks and cetaceans

Performance Indicator	**PI 2.3.2d. There is some evidence that the measures/strategy is being implemented successfully**
Score	PI 2.3.2 – FADS: 75 PI 2.3.2 – Free school: 75
Justification	2.3.2.d ***Whale shark*** The number of sets with whale shark interactions in the UoA suggests that **the requirements to avoid setting on live whale sharks are not being successfully implemented for the UoA**, particularly for free school sets. The interaction rate (13 whale sharks/1000 sets) is comparable with the rates reported elsewhere in the WCPO (Common Oceans (ABNJ) Tuna Project 2018c) but this rate has excluded sets recorded by observers as being whale shark sets (observer school type code 7) which are out of scope. Although this rate of interactions is not considered to be hindering recovery, it indicates that the sets on whale sharks are not successfully avoided. Detection of the existence of whale sharks prior to making a set may be difficult but the Guidelines for the Safe Release of Encircled Whale Sharks (WCPFC 2015) note that "the PNA requires that when a whale shark is encountered in a purse seine net in PNA waters the net roll must be immediately stopped, and the whale shark released". Additional information is needed to show that appropriate measures to avoid setting on whale sharks, and to safely release any encircled whale sharks, are being implemented for UoA vessels. ***Cetaceans*** The number of sets with cetacean interactions reported by observers, and the numbers involved in many of these instances, suggests that **the requirement to avoid setting on cetaceans is not being successfully implemented for the UoA**. As whales must come to the surface to breathe and often do so by emitting visible and audible spouts, they should be readily detectable before a set is made. It has been suggested that sets on FADs are frequently made before dawn when cetaceans are not able to be seen, but free school sets have also regularly caught cetaceans. **The frequency with which multiple cetaceans (up to**

	40 animals) have been recorded by observers suggests that the methods employed to avoid setting on cetaceans are not effective.	
Condition	2-2 (PI 2.3.2.d) – FAD sets and Free school sets: By the ~~fourth surveillance audit~~ *first surveillance audit following fishery recertification*, provide some evidence that the measures/strategies for whale sharks and cetaceans are being implemented successfully	
Milestone Year 1 (Covid derogation & VR Derogation)	**Surveillance (~~2021~~ 2022):** ~~develop and provide a plan to demonstrate the effective implementation of measures to avoid setting on whale sharks and cetaceans in the fishery.~~ *Review and identify improvements to the implementation of measures to avoid setting on whale sharks and cetaceans in the fishery and for safe release of whale sharks and cetaceans.* Expected score: 75	
Client Action Plan	Activities:	PNG FIA will actively support work towards the development and adoption of a ETP species management strategy that enable adequate information availability for period of three years to measure trends and manage fishing impacts on ETP species and ETP bycatch levels to remain at acceptable level. PNG FIA will lead in efforts to co-organize with NFA on country level work (ie management plan reviews) and also with other key stakeholders to progress and drive actions in response to identified ETP strategy and the suggested approach in the fisheries management and development in PNG. **PNG FIA or industry Participation in Fisheries Management** The National Tuna Management & Development Plan has sub-technical advisory committee which includes representative of industry. Accordingly, PNG FIA will work through the industry representative in the committee to encourage, motivate and ensure committee meetings are convened and workplans developed and progress respective actions related to this subject condition. FIA representative on the National Fisheries Board will encourage, motivate and ensure Board meetings give advice and direction to NFA workplans and ETP strategy developed and respective actions related to this subject condition progressed with target schedules. **Year 1-2 Actions:** • FIA will assist NFA and co-organise in 2020 for a NFA-Industry consultation meeting to have a ByCatch Mitigation information and reporting GAP analysis. • co-organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy. • Undertake a workplan to review by-catch logsheet reporting and observer data on milestone year 2. • develop a draft ETP species management strategy • adopt and implement the ETP management strategy • provide evidence at the 1-2 annual surveillance audits that the amount of processed data available has been significantly improved and that

		protocols for data processing have been established to assure the provision of the data required in future years. • Co-organize with NFA that there is 100% observer coverage and reporting also covers ETP strategy on the tuna purse seine fleet. • PNG FIA fleet vessels are registered in the regional vessel register.
	Expected outcome Year 1:	• Bycatch mitigation workshop and training conducted • Reporting protocols reviewed and GAP analysis undertaken • ETP Management Strategy developed and initiated adopted • Shark National Plan of Action (NPOA) workplan developed. • workplan to review by-catch logsheet reporting and observer data on milestone year 2 established and implemented. • Meeting records and reports
	Responsible Party/ies:	**Action Lead** **FIA will:** • co-organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy • support NFA to develop a draft ETP species management strategy • support, encourage and motivate NFA to adopt and implement the ETP management strategy • provide evidence at the surveillance audits that the amount of processed data available to assess whale sharks and cetaceans interactions has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years. • Co-organize with NFA that there is 100% observer coverage and reporting also covers ETP strategy on the tuna purse seine fleet. • Will ensure PNG FIA fleet vessels are registered in the regional vessel register. • Support NFA in facilitating and coordinating the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. • Support NFA in coordinating the NFA/Industry consultation • Participate in all consultative meetings to assist and support NFA in ensuring the industry input in regards to this condition is rendered. **Partner Support** **NFA will:** • organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy

		• develop a draft ETP species management strategy • adopt the ETP management strategy • provide evidence at the 1-2 annual surveillance audits that the amount of processed data available has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years. • Ensure 100% observer coverage on PNG FIA fleet and reporting also covers ETP strategy requirements on the PNG FIA tuna purse seine fleet. • Ensure PNG FIA fleet vessels are registered in the regional vessel register. • Facilitate and coordinate the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. • Coordinate the NFA/Industry consultation • Will encourage the active participation of PNG FIA in WCPFC meetings as part of the PNG delegations • oversee and coordinate the participation of multi-stakeholders in the consultation on this condition
Milestone Year ~~1~~ 2	**Surveillance (2023):** ~~provide information on the factors contributing to the setting of purse seines on whale sharks and cetaceans in the fishery and options to reduce their frequency.~~ *Develop and provide a plan to demonstrate the effective implementation of measures to avoid setting on whale sharks and cetaceans in the fishery and to ensure safe release measures are implemented effectively.* *Expected score: 75*	
Client Action Plan	Activities:	PNG FIA will actively support work towards the development and adoption of a ETP species management strategy that enable adequate information availability for period of three years to measure trends and manage fishing impacts on ETP species and ETP bycatch levels to remain at acceptable level. PNG FIA will lead in efforts to co-organize with NFA on country level work (ie management plan reviews) and also with other key stakeholders to progress and drive actions in response to identified ETP strategy and the suggested approach in the fisheries management and development in the PNG. **PNG FIA or industry Participation in Fisheries Management** The National Tuna Management & Development Plan has sub-technical advisory committee which includes representative of industry. Accordingly, PNG FIA will work through the industry representative in the committee to encourage, motivate and ensure committee meetings are convened and workplans developed and progress respective actions related to this subject condition. FIA representative on the National Fisheries Board will encourage, motivate and ensure Board meetings give advice and direction to NFA workplans and ETP

		strategy developed, and respective actions related to this subject condition progressed with target schedules. **Year 1-2 Actions:** • FIA will assist NFA and co-organise in 2020 for a NFA-Industry consultation meeting to have a Bycatch Mitigation information and reporting GAP analysis. • co-organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy. • Undertake a workplan to review by-catch logsheet reporting and observer data on milestone year 2. • develop a draft ETP species management strategy • adopt and implement the ETP management strategy • provide evidence at the 1-2 annual surveillance audits that the amount of processed data available has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years. • Co-organize with NFA that there is 100% observer coverage and reporting also covers ETP strategy on the tuna purse seine fleet. • PNG FIA fleet vessels are registered in the regional vessel register.
	Expected outcome Year ~~1~~ 2:	• Bycatch mitigation workshop and training conducted • Reporting protocols reviewed and GAP analysis undertaken • ETP Management Strategy developed and initiated adopted • Shark National Plan of Action (NPOA) workplan developed. • workplan to review by-catch logsheet reporting and observer data on milestone year 2 established and implemented. • Meeting records and reports
	Responsible Party/ies:	**Action Lead** **FIA will:** • co-organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy • support NFA to develop a draft ETP species management strategy • support, encourage and motivate NFA to adopt and implement the ETP management strategy • provide evidence at the surveillance audits that the amount of processed data available to assess whale sharks and cetaceans interactions has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years.

		• Co-organize with NFA that there is 100% observer coverage and reporting also covers ETP strategy on the tuna purse seine fleet. • Will ensure PNG FIA fleet vessels are registered in the regional vessel register. • Support NFA in facilitating and coordinating the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. • Support NFA in coordinating the NFA/Industry consultation • Participate in all consultative meetings to assist and support NFA in ensuring the industry input in regards to this condition is rendered. **Partner Support** **NFA will:** • organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy • develop a draft ETP species management strategy • adopt the ETP management strategy • provide evidence at the 1-2 annual surveillance audits that the amount of processed data available has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years. • Ensure 100% observer coverage on PNG FIA fleet and reporting also covers ETP strategy requirements on the PNG FIA tuna purse seine fleet. • Ensure PNG FIA fleet vessels are registered in the regional vessel register. • Facilitate and coordinate the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. • Coordinate the NFA/Industry consultation • Will encourage the active participation of PNG FIA in WCPFC meetings as part of the PNG delegations • oversee and coordinate the participation of multi-stakeholders in the consultation on this condition
Milestone Year 3		**Surveillance (~~2022~~ 2024):** ~~provide some evidence that one or more options have been tested and proved effective in increasing the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery.~~ *~~Develop and implement a strategy for testing options to reduce impact of the fishery on whale sharks and cetaceans.~~ Provide an update on plan implementation for measures to avoid setting on whale sharks and cetaceans. This update should include but is not limited to* 1. *updated observer data documenting the number of sets identified as "whale shark" or "live whale" sets in the most recent year available and how they relate to previous values;*

	2. and any documentation of efforts to increase fleet compliance with WCPFC CMMs 2011-03 and 2022-04 (e.g., incentivization trials, other outreach). *Expected score: 75 (Possible score change if evidence of effective implementation)*	
Client Action Plan	Activities:	**Year 1-2 Actions:** • implementation of the ETP management strategy • Develop a workplan for establishing historical interaction levels of whale sharks and cetaceans for more than three years of information prior to 2020 to measure trends that support the strategy to manage interactions and impacts with vulnerable sharks and cetacean. • Undertake a workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed. • NFA has agreed to provide the necessary support to ensure continued 100% observer coverage of PNG FIA tuna purse seine vessels, as in place previous years. • PNG FIA fleet to improve its logsheet report in line with NFA work to improve the processing of observer data into useful data sets. The problems of the initial years identified are being overcome, and PNG FIA will present interaction data on whale shark & cetacean (improved narrative of environment and situation of setting that had an interaction with whale sharks and cetaceans) from a minimum of 50% of the all sets. • PNG FIA will ensure that the available data are representative of the entire Unit of Assessment (UoA). • PNG FIA actively collaborates with research centres (SPC, WCPFC and ENGOs) in using the available data. This includes ensuring updated catch data tables reported in compliance report to SC and TCC. • PNG FIA will ensure fleet reporting will continue the monitoring of catch and by-catch. The data provided will allow a better understanding of the status and trends of retained species. This includes development of a skipper handbook on ETP reporting and training awareness on the handbook conducted. • PNG FIA coordinates with NFA on reviews and assessments to ensure NFA observers will continue the monitoring of catch and by-catch by all FIA vessels. The data provided will allow a better understanding of the status and trends of retained species. This includes review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. • PNG FIA will co-organize with NFA to survey bycatch and discards in sufficient detail (species, sex, capture location, size and fate) to allow quantification of total catch, species composition and vulnerable species interacting with the fishery. • PNG FIA will continue to record the by-catch of vulnerable species bycatch and report all catches as per WCPFC Resolution and bycatch reporting protocols.

		• PNG to inform of its country level workplan to SC and TCC. And work with the subregional groups to make recommendations at the SC to progress work in addressing this issue. • Develop a workplan for technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery.
	Expected outcome Year ~~2~~ 3:	• ETP Management Strategy adopted and implemented • Shark National Plan of Action (NPOA) developed and adopted. • Skipper handbook in handling whale shark and Cetaceans developed. • workplan to review by-catch logsheet reporting and observer data on milestone year 1 established and implemented. • Establishment of historical interaction levels (at least past 3 years) of whale sharks and cetacean recorded • a workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed • analysis of interaction data and information collection system provides good basis in guiding the operational strategies to reduce frequency of interaction with whale sharks and cetaceans • ensuring updated catch data tables reported in compliance report to SC and TCC • reviews and assessments undertaken -NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. Including surveyof bycatch and discards details (species, sex, capture location, size and fate). • SPC receives the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet • Workplan developed for technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. • By-Catch Mitigation information and reporting. • Meeting Minutes
	Responsible Party/ies:	**Action Lead** **FIA will:** • support and assist NFA in the development of ETP Management Strategy adopted and implemented • ensure the ETP Management Strategy is implemented by FIA fleet • support NFA in development of the Shark National Plan of Action (NPOA).

		• Ensure awareness and training of the Skipper handbook in handling whale shark and Cetaceans used by FIA fleet. • Support and co-organise with NFA the development of a workplan to review by-catch logsheet reporting and observer data on milestone year 2 established. • Support NFA in the development of a workplan for establishing base line reference and target • Support and co-organize a workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed • Provide evidence to the fourth annual surveillance audit that the processed data available for the previous years are adequate • ensuring updated catch data tables reported by NFA in compliance report to SC and TCC • support and co-organize the review and assessment on NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. • FIA will undertake a survey of bycatch and discards details (species, sex, capture location, size and fate). • Will ensure SPC receives the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet • Assist and co-organize with NFA a technical assessment on one or more options be tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. • Support and co-organise with NFA to review the ETP Management Strategy. • Support and co-organize with NFA to review the National Tuna Development & Management Plan(NTDMP) • Support NFA in coordinating the NFA/Industry consultation • Participate in all consultative meetings to assist and support NFA in ensuring the industry input in regards to this condition is rendered. **Partner Support** **NFA will:** • Ensure the ETP Management Strategy is adopted and implemented • ensure the ETP Management Strategy is implemented by FIA fleet • develop the Shark National Plan of Action (NPOA). • Undertake awareness and training of the Skipper handbook in handling whale shark and Cetaceans and is used by FIA fleet.

		• Develop a workplan to review by-catch logsheet reporting and observer data on milestone year 1 established. • develop a workplan for establishing base line reference and target • develop a workplan for technical assessment on one or more options be tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. • develop a workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed • Provide evidence to the fourth annual surveillance audit that the processed data available for the previous years are adequate • Provide updated catch data tables in compliance report to SC and TCC • review and assess NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. • Undertake a survey of bycatch and discards details (species, sex, capture location, size and fate). • Provide SPC the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet • Coordinate the NFA/Industry consultation • Will encourage the active participation of PNG FIA in regional meetings as part of the PNG delegations • oversee and coordinate the participation of multi-stakeholders in the consultation on this condition
Milestone Year ~~3~~ 4	**Surveillance (~~2023~~ 2025):** ~~provide some evidence that the measures/strategies for whale sharks and cetaceans are being implemented successfully for the whole fishery. Proposed score 80.~~ *Provide some evidence that ~~one or more options have~~ the plan in place has been tested and proved effective in increasing the effectiveness of measures to reduce impact of the fishery on whale sharks and cetaceans by reducing intentional sets on these animals. This should at minimum include updated observer data.* *Expected score: ~~75~~ 80*	
Client Action Plan	**Activities:**	**Year 1-4 Actions:** • ETP Management Strategy is implemented and enforced by NFA • ETP Management Strategy is implemented by FIA fleet • Shark National Plan of Action (NPOA) is implemented. • Awareness and training of the Skipper handbook in handling whale shark and Cetaceans and is used by FIA fleet ongoing. • Develop a workplan to review by-catch logsheet reporting and observer data per outcomes and recommendations of surveillance audits. • provide evidence that the 1-2 annual surveillance audits recommendations are implemented to demonstrate that the amount of processed data available has been significantly improved and that protocols for data

		processing is working and effective to assure the provision of the data required in future years. • establishing base line reference and target • Implement the workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed • Assess outcomes of the review of NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. • Refine and update reporting requirement as per the recommendation of the survey of bycatch and discards details (species, sex, capture location, size and fate). • Provide SPC the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet • Implement 100% observer coverage on PNG FIA fleet and reporting of ETP strategy requirements by the PNG FIA tuna purse seine fleet is satisfactory. • Updated catch data tables from at a minimum of 50% of the total sets for years 1-3 • Undertake technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. • Coordinate the NFA/Industry consultation and also multi-stakeholders consultation on the milestone. • Provide updated catch data tables in compliance report to SC and TCC
	Expected outcome Year ~~3~~ 4:	• Technical report of assessment on tests on effectiveness of mitigation measures presented at NFA/Industry annual consultation • PNG to inform outcome report to SC and TCC. And work with the subregional groups to make recommendations at the SC~~16~~ to progress work in addressing this PI. • Compliance Monitoring Reports circulated for public information. • Independent scientific body verification of the technical report of assessment on tests of options • SC advice on the technical assessment on tests
	Responsible Party/ies:	Lead Party FIA will: • Ensure the ETP Management Strategy is implemented by FIA fleet • Ensure the Shark National Plan of Action (NPOA) is implemented.

		• Co-organize with NFA the awareness and training in use of the Skipper handbook in handling whale shark and Cetaceans and is used by FIA fleet. • Co-organise with NFA to develop a workplan to review by-catch logsheet reporting and observer data as per outcomes and recommendations of previous surveillance audits. • provide evidence that the 1-2 annual surveillance audits recommendations are implemented to demonstrate that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. • Support NFA in delivering the workplan to establish a base line reference and target • Assist and cooperate with NFA to undertake technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. • Implement the workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed • Assess outcomes of the review of NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. • Refine and update reporting requirement as per the recommendation of the survey of bycatch and discards details (species, sex, capture location size and fate). • Provide SPC the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet • Undertake a technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. • Implement 100% observer coverage on PNG FIA fleet and reporting of ETP strategy requirements by the PNG FIA tuna purse seine fleet is satisfactory. • Support NFA to coordinate the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. • Coordinate the NFA/Industry consultation and also multi-stakeholders consultation on the milestone. • Provide updated catch data tables in compliance report to SC and TCC Support Party NFA will: • ETP Management Strategy is implemented and enforced by NFA • ETP Management Strategy is implemented by FIA fleet • Shark National Plan of Action (NPOA) is implemented.

		• Awareness and training of the Skipper handbook in handling whale shark and Cetaceans and is used by FIA fleet ongoing. • Develop a workplan to review by-catch logsheet reporting and observer data per outcomes and recommendations of surveillance audits. • Undertake technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. • provide evidence that the 1-2 annual surveillance audits recommendations are implemented to demonstrate that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. • Implement the workplan for establishing base line reference and target • Implement the workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed • Assess outcomes of the review of NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. • Refine and update reporting requirement as per the recommendation of the survey of bycatch and discards details (species, sex, capture location, size and fate). • Provide SPC the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet • Undertake a technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. • Implement 100% observer coverage on PNG FIA fleet and reporting of ETP strategy requirements by the PNG FIA tuna purse seine fleet is satisfactory. • Facilitate and coordinate the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. • Coordinate the NFA/Industry consultation and also multi-stakeholders consultation on the milestone. • Provide updated catch data tables in compliance report to SC and TCC
Milestone Year 1 (Reassessment)	***[If condition is not closed in Year 4] Surveillance (~~2024~~ 2026):*** *provide some evidence that the measures/strategies for whale sharks and cetaceans are being implemented successfully for the whole fishery. Provide evidence that the direct effects of the UoA are highly likely to not hinder recovery of Cetacean species* *Expected score: 80*	
	Activities:	PNG FIA will provide evidence to the first annual surveillance audit at re-assessment that the processed data available for the previous years are

Client Action Plan		adequate to measure trends and support a strategy to manage impacts of the fishery on ETP species. **Actions:** • Analysis of data made available for the last three years to measure trends that support the ETP strategy to manage impacts on ETP species and ensure that ETP bycatch levels remain at target levels. Updated catch data tables from at a minimum of 80% of the total sets for years 1-4 • provide evidence that the 1-4 annual surveillance audits recommendations are implemented to demonstrate that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. • SPC requested to provide analysis of the data provided in the last three years to profile the compliance with the good practice code of PNG FIA fleet. • Report and discuss at NTMDP technical advisory committee meeting the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. • Report and discuss at NFA/Industry meeting the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. • Report and discuss at SC and TCC meeting the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery • review the ETP Management Strategy and refine GAPs identified. • Undertake a review of the surveillance audit 1-4 recommendations, measures and strategies in place to confirm implementation of ETP Management Strategy is working towards meeting measures objectives • review the National Tuna Development & Management Plan (NTDMP), if required.
	Expected outcome Year ~~4~~ 1 (Reassessment):	Analysis of data made available for the last three years undertaken and circulated and discussions held that measure trends that the ETP strategy is managing impacts on ETP species and ensuring ETP bycatch levels remain at target levels Demonstrated evidence that the 1-4 annual surveillance audits recommendations are implemented and have proven that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. SPC undertaken analysis of the data provided in the last three years and profile the compliance with the good practice code of PNG FIA fleet.

		NTMDP technical advisory committee considers and adopts one or more options tested and proven as effective measure(s) to mitigate setting on whale sharks and cetaceans in the fishery. NFA/Industry meeting convened and the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery is discussed. SC and TCC meeting noted the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery as reported in Compliance report ETP Management Strategy reviewed and GAPs identified refined. National Tuna Development & Management Plan (NTDMP) is reviewed, if required. Providence of Compliance Reports, Stock Assessment Reports
	Responsible Party/ies:	Action Lead FIA will: • Seek analysis of data made available for the last three years undertaken and circulated and discussions held that measure trends that the ETP strategy is managing impacts on ETP species and ensuring ETP bycatch levels remain at target levels • Demonstrated evidence that the 1-3 annual surveillance audits recommendations are implemented and have proven that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. • Seek technical assistance for analysis of the data provided in the last three years and profiling of the compliance with the good practice code of PNG FIA fleet. • Coordinate with NFA to convene the NTMDP technical advisory committee to discuss the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery and develop further work program as required. • Co-organise with NFA a NFA/Industry consultation meeting be convened and the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery is discussed. • Coordinate and support NFA to provide input into the Compliance report to SC and TCC on the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. • Support NFA to plan and coordinate the review of ETP Management Strategy and refinement of GAPs identified.

		• Support NFA to plan and coordinate the review of National Tuna Development & Management Plan(NTDMP), if required. Action Partners NFA will: • Analyse the data made available for the last three years undertaken and circulated and discussions held that measure trends that the ETP strategy is managing impacts on ETP species and ensuring ETP bycatch levels remain at target levels • Demonstrated evidence that the 1-3 annual surveillance audits recommendations are implemented and have proven that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. • Analyse the data provided in the last three years and profile the compliance with the good practice code of PNG FIA fleet. • Convene the NTMDP technical advisory committee to discuss the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery and develop further work program as required. • Convene a NFA/Industry consultation and discuss the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. • Undertake Compliance report to SC and TCC on the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. • Review of ETP Management Strategy and refinement of GAPs identified. • Review of National Tuna Development & Management Plan (NTDMP), if required.
Consultation on condition	Letters of support from NFA in relation with action plan	
Progress on Condition (Year 1)	The assessment team did not receive any evidence of progress against the expected results for the interim milestone for year 1. There is no evidence that the fishery made any progress in examining and providing information on the factors contributing to the setting of purse seines on whale sharks and cetaceans in the fishery, as expected on year 1 milestone for this condition. The slow progress was in part on account of Covid and change in management personnel in NFA. The fishery is behind target for the Year 1 Milestone. The fishery should continue to review and identify improvements to the implementation of measures to avoid setting on whale sharks and cetaceans in the fishery and for safe release of whale sharks and cetaceans.	
Progress on Condition (Year 2)	The assessment team was able to gather information regarding progress toward meeting this condition's year 1 (behind target) and year 2 milestones at the onsite audit and from documentation provided by the client. Discussions with vessel operators and crew confirmed that it is quite difficult to determine whether a whale shark is being set on if they are not	

	actively feeding at the surface and instead within or below the tuna school. Skippers and crew confirmed that they are aware that whale sharks should be removed from the net prior to brailing whenever possible and provided testimony that they regularly cut the net to let whale sharks escape. Observer data from recent years suggests skippers regularly, if infrequently, set nets on cetaceans. The assessment team viewed several observer reports documenting cetacean-associated sets including detailed notes and interviewed observers about how they determine that the net has been set on a cetacean or group of cetaceans. The forms (PS-3) clearly require the observer to record the time at which the cetacean was spotted and the time at which the set began, which, when the former takes place prior to the latter, suggests that the net was purposely set on the whale or dolphin(s) unless the skipper somehow did not observe the animal at the same time the observer did. The client provided several documents as evidence of meeting the milestones, including: 1. PNG FIA Workplan to Evaluate Whale Sharks Interaction 2. A progress report on the PNG FIA Whale Shark Work Plan 3. PNG FIA Workplan to Evaluate and mitigate sets on live Whales 4. Notes and attendance reports from trainings held to review handling and safe release of ETP species and evidence of materials distributed to fleet outlining handling and safe release procedures This condition is on the management implementation SI, 2.3.2(d), and part of the work the client group has done is to document the rate of interactions with whale sharks to provide evidence that the measures in place are being implemented in the fleet. They showed that the overall number of discarded whale sharks has decreased in recent years for the UoC, and the rate of catches and number of observed whale shark-associated sets for the entire fishery has likewise decreased (Tables from the progress report included below for reference). Similarly, the client group prepared a work plan to evaluate and mitigate sets on live whales which includes an annual summary of whale interactions for the fleet with follow-ups for vessels with identified whale sets, observer training to ensure the definition of a whale-associated set is clear, and exploration of an incentivization or penalty scheme whereby vessels with no whale sets or multiple whale sets would be either rewarded or penalized, respectively. The assessment team notes that this plan does not specify how they will demonstrate effective implementation and has modified subsequent milestones to emphasize inclusion of verifiable evidence of implementation. Evidence of safe handling procedures training for ETP species undertaken by UoC vessels was also provided, though the assessment team found evidence that skippers may not have passed along this information to their crews, or some species were being handled following these guidelines, but not others. The assessment team also found evidence of skippers notifying NFA when interactions with ETP species (mostly whale sharks) occurred, as required. The milestones needing to be met for this condition include reviewing and identifying improvements to avoid setting on whale sharks and cetaceans and improve safe release for these species and developing a plan to demonstrate effective implantation of management measures relating to these species. The combined evidence provided by the client and gathered by the assessment team from skippers and crew onsite suggests the condition is back on target for cetaceans and ahead of target for whale sharks.

Table 1. Number of observed captured whale sharks, by fate (discarded, retained, or escaped), 2019-2022.

Year	Number discarded	No. retained	No. escaped
2019	94	0	0
2020	56	0	1
2021	38	0	0
2022	17	0	0

Table 3. Annual observed whale shark catch rate [WCPFC], 2019-2022.

Year	Observed sets	No. observed captured whale sharks	1000*Catch/set
2019	13,128	94	7.2
2020	10,183	57	5.6
2021	9,704	38	3.9
2022	5,092	17	3.3

Table 4. Number of observed sets on live whale sharks [WCPFC], 2019-2022.

Year	No. observed live whale shark sets
2019	264
2020	133
2021	123
2022	29

Status	On target for cetaceans; ahead of target for whale sharks
Additional information	Covid Derogation 6 applied

3.3.4 Condition 2-3 (PI 2.3.3) – Mobulid rays, cetaceans and whale sharks. CLOSED

Performance Indicator	PI 2.3.3a. 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 whale sharks and Mobula and cetaceans
Score	PI 2.3.3 - FADS: 75 PI 2.3.3 - Free school: 75
Justification	See rationale of PI 2.3.3a and PI 2.3.3b
Condition	2-3 (PI 2.3.3)- FAD sets and Free school sets: SI a. By the ~~fourth surveillance audit~~ first surveillance audit following fishery recertification, provide some quantitative information that 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 Mobulid Rays cetaceans

	SI b. By first surveillance audit following fishery recertification provide evidence that information is adequate to measure trends and support a strategy to manage impacts on mobulid rays, cetaceans and whale sharks.	
Milestone Year 1 (Covid derogation)	Surveillance (~~2021~~ 2022): develop and provide a plan to demonstrate the effective implementation of measures to avoid setting on whale sharks and cetaceans in the fishery. Review and identify improvements to: the ROP minimum standard data fields for whale sharks and cetaceans – to allow for a distinction between an interaction and potential infractions. Collection of species-level and fate information for Mobula species Expected score: 75	
Client Action Plan	Activities:	PNG FIA will actively support work towards the development and adoption of a ETP species management strategy that enable adequate information availability for period of three years to measure trends and manage fishing impacts on ETP species and ETP bycatch levels to remain at acceptable level. NG FIA will lead in efforts to co-organize with NFA on country level work (ie management plan reviews) and also with other key stakeholders to progress and drive actions in response to identified ETP strategy and the suggested approach in the fisheries management and development in the PNG. PNG FIA or industry Participation in Fisheries Management The National Tuna Management & Development Plan has sub-technical advisory committee which includes representative of industry. Accordingly, PNG FIA will work through the industry representative in the committee to encourage, motivate and ensure committee meetings are convened and workplans developed and progress respective actions related to this subject condition. FIA representative on the National Fisheries Board will encourage, motivate and ensure Board meetings give advice and direction to NFA workplans and ETP strategy developed and respective actions related to this subject condition progressed with target schedules. **Year 1-2 Actions**: FIA will assist NFA and co-organise in 2020 for a NFA-Industry consultation meeting to have a ByCatch Mitigation information and reporting GAP analysis. co-organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy. Undertake a workplan to review by-catch logsheet reporting and observer data on milestone year 2. develop a draft ETP species management strategy adopt and implement the ETP management strategy provide evidence at the 1-2 annual surveillance audits that the amount of processed data available has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years.

		Co-organize with NFA that there is 100% observer coverage and reporting also covers ETP strategy on the tuna purse seine fleet. PNG FIA fleet vessels are registered in the regional vessel register.
	Expected outcome Year 1:	Bycatch mitigation workshop and training conducted Reporting protocols reviewed and GAP analysis undertaken ETP Management Strategy developed and initiated adopted Shark National Plan of Action (NPOA) workplan developed. workplan to review by-catch logsheet reporting and observer data on milestone year 2 established and implemented. Meeting records and reports
	Responsible Party/ies:	**Action Lead** **FIA will:** co-organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy support NFA to develop a draft ETP species management strategy support, encourage and motivate NFA to adopt and implement the ETP management strategy provide evidence at the surveillance audits that the amount of processed data available to assess whale sharks and cetaceans interactions has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years. Co-organize with NFA that there is 100% observer coverage and reporting also covers ETP strategy on the tuna purse seine fleet. Will ensure PNG FIA fleet vessels are registered in the regional vessel register. Support NFA in facilitating and coordinating the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. Support NFA in coordinating the NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input in regards to this condition is rendered. **Partner Support** **NFA will:** organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy develop a draft ETP species management strategy adopt the ETP management strategy provide evidence at the 1-2 annual surveillance audits that the amount of processed data available has been significantly improved and that protocols

		for data processing have been established to assure the provision of the data required in future years. Ensure 100% observer coverage on PNG FIA fleet and reporting also covers ETP strategy requirements on the PNG FIA tuna purse seine fleet. Ensure PNG FIA fleet vessels are registered in the regional vessel register. Facilitate and coordinate the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. Coordinate the NFA/Industry consultation Will encourage the active participation of PNG FIA in WCPFC meetings as part of the PNG delegations oversee and coordinate the participation of multi-stakeholders in the consultation on this condition
Milestone Year 2	Surveillance (2023): provide information on the factors contributing to the setting of purse seines on whale sharks and cetaceans in the fishery and options to reduce their frequency. Develop and provide a plan to demonstrate: the ROP minimum standard data fields for whale sharks and cetaceans allow for a distinction between an interaction and potential infractions. collection of species-level and fate information for Mobula species Expected score: 75	
Client Action Plan	Activities:	PNG FIA will actively support work towards the development and adoption of a ETP species management strategy that enable adequate information availability for period of three years to measure trends and manage fishing impacts on ETP species and ETP bycatch levels to remain at acceptable level. PNG FIA will lead in efforts to co-organize with NFA on country level work (ie management plan reviews) and also with other key stakeholders to progress and drive actions in response to identified ETP strategy and the suggested approach in the fisheries management and development in the PNG. PNG FIA or industry Participation in Fisheries Management The National Tuna Management & Development Plan has sub-technical advisory committee which includes representative of industry. Accordingly, PNG FIA will work through the industry representative in the committee to encourage, motivate and ensure committee meetings are convened and workplans developed and progress respective actions related to this subject condition. FIA representative on the National Fisheries Board will encourage, motivate and ensure Board meetings give advice and direction to NFA workplans and ETP strategy developed and respective actions related to this subject condition progressed with target schedules. **Year 1-2 Actions:** FIA will assist NFA and co-organise in 2020 for a NFA-Industry consultation meeting to have a ByCatch Mitigation information and reporting GAP analysis.

		co-organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy. Undertake a workplan to review by-catch logsheet reporting and observer data on milestone year 2. develop a draft ETP species management strategy adopt and implement the ETP management strategy provide evidence at the 1-2 annual surveillance audits that the amount of processed data available has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years. Co-organize with NFA that there is 100% observer coverage and reporting also covers ETP strategy on the tuna purse seine fleet. PNG FIA fleet vessels are registered in the regional vessel register.
	Expected outcome Year 1 2:	Bycatch mitigation workshop and training conducted Reporting protocols reviewed and GAP analysis undertaken ETP Management Strategy developed and initiated adopted Shark National Plan of Action (NPOA) workplan developed. workplan to review by-catch logsheet reporting and observer data on milestone year 2 established and implemented. Meeting records and reports
	Responsible Party/ies:	**Action Lead** **FIA will:** co-organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy support NFA to develop a draft ETP species management strategy support, encourage and motivate NFA to adopt and implement the ETP management strategy provide evidence at the surveillance audits that the amount of processed data available to assess whale sharks and cetaceans interactions has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years. Co-organize with NFA that there is 100% observer coverage and reporting also covers ETP strategy on the tuna purse seine fleet. Will ensure PNG FIA fleet vessels are registered in the regional vessel register. Support NFA in facilitating and coordinating the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. Support NFA in coordinating the NFA/Industry consultation

		Participate in all consultative meetings to assist and support NFA in ensuring the industry input in regards to this condition is rendered. **Partner Support** **NFA will:** organize an industry/NFA workshop to discuss and formulate plans for the development and adoption of a ETP species management strategy develop a draft ETP species management strategy adopt the ETP management strategy provide evidence at the 1-2 annual surveillance audits that the amount of processed data available has been significantly improved and that protocols for data processing have been established to assure the provision of the data required in future years. Ensure 100% observer coverage on PNG FIA fleet and reporting also covers ETP strategy requirements on the PNG FIA tuna purse seine fleet. Ensure PNG FIA fleet vessels are registered in the regional vessel register. Facilitate and coordinate the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. Coordinate the NFA/Industry consultation Will encourage the active participation of PNG FIA in WCPFC meetings as part of the PNG delegations oversee and coordinate the participation of multi-stakeholders in the consultation on this condition
Milestone Year 3	Surveillance (~~2022~~ 2024): provide some evidence that one or more options have been tested and proved effective in increasing the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. Provide evidence of implementation of the strategy for testing options for the following objectives: the ROP minimum standard data fields for whale sharks and cetaceans allow for a distinction between an interaction and potential infractions. collection of species-level and fate information for Mobula species Expected score: 75	
Client Action Plan	Activities:	Year 3 Actions: implementation of the ETP management strategy Develop a workplan for establishing historical interaction levels of whale sharks and cetaceans for more than three years of information prior to 2020 to measure trends that support the strategy to manage interactions and impacts with vulnerable sharks and cetacean. Undertake a workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed.

		NFA has agreed to provide the necessary support to ensure continued 100% observer coverage of PNG FIA tuna purse seine vessels, as in place previous years. PNG FIA fleet to improve its logsheet report in line with NFA work to improve the processing of observer data into useful data sets. The problems of the initial years identified are being overcome, and PNG FIA will present interaction data on whale shark & cetacean (improved narrative of environment and situation of setting that had an interaction with whale sharks and cetaceans) from a minimum of 50% of the all sets. PNG FIA will ensure that the available data are representative of the entire Unit of Assessment (UoA). PNG FIA actively collaborates with research centres (SPC, WCPFC and ENGOs) in using the available data. This includes ensuring updated catch data tables reported in compliance report to SC and TCC. PNG FIA will ensure fleet reporting will continue the monitoring of catch and by-catch. The data provided will allow a better understanding of the status and trends of retained species. This includes development of a skipper handbook on ETP reporting and training awareness on the handbook conducted. PNG FIA coordinates with NFA on reviews and assessments to ensure NFA observers will continue the monitoring of catch and by-catch by all FIA vessels. The data provided will allow a better understanding of the status and trends of retained species. This includes review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. PNG FIA will co-organize with NFA to survey bycatch and discards in sufficient detail (species, sex, capture location, size and fate) to allow quantification of total catch, species composition and vulnerable species interacting with the fishery. PNG FIA will continue to record the by-catch of vulnerable species bycatch and report all catches as per WCPFC Resolution and bycatch reporting protocols. PNG to inform of its country level workplan to SC and TCC. And work with the subregional groups to make recommendations at the SC to progress work in addressing this issue. Develop a workplan for technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery.
	Expected outcome Year ~~2~~ 3:	ETP Management Strategy adopted and implemented Shark National Plan of Action (NPOA) developed and adopted. Skipper handbook in handling whale shark and Cetaceans developed. workplan to review by-catch logsheet reporting and observer data on milestone year 1 established and implemented. Establishment of historical interaction levels (at least past 3 years) of whale sharks and cetacean recorded

		a workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed analysis of interaction data and information collection system provides good basis in guiding the operational strategies to reduce frequency of interaction with whale sharks and cetaceans ensuring updated catch data tables reported in compliance report to SC and TCC reviews and assessments undertaken -NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. Including surveyof bycatch and discards details (species, sex, capture location, size and fate). SPC receives the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet Workplan developed for technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. By-Catch Mitigation information and reporting. Meeting Minutes
	Responsible Party/ies:	**Action Lead** **FIA will:** support and assist NFA in the development of ETP Management Strategy adopted and implemented ensure the ETP Management Strategy is implemented by FIA fleet support NFA in development of the Shark National Plan of Action (NPOA). Ensure awareness and training of the Skipper handbook in handling whale shark and Cetaceans used by FIA fleet. Support and co-organise with NFA the development of a workplan to review by-catch logsheet reporting and observer data on milestone year 2 established. Support NFA in the development of a workplan for establishing base line reference and target Support and co-organize a workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed Provide evidence to the fourth annual surveillance audit that the processed data available for the previous years are adequate ensuring updated catch data tables reported by NFA in compliance report to SC and TCC support and co-organize the review and assessment on NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer

		standard operating procedure and guidelines in handling whale shark and cetaceans. FIA will undertake a survey of bycatch and discards details (species, sex, capture location, size and fate). Will ensure SPC receives the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet Assist and co-organize with NFA a technical assessment on one or more options be tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. Support and co-organise with NFA to review the ETP Management Strategy. Support and co-organize with NFA to review the National Tuna Development & Management Plan(NTDMP) Support NFA in coordinating the NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input in regards to this condition is rendered. **Partner Support** **NFA will:** Ensure the ETP Management Strategy is adopted and implemented ensure the ETP Management Strategy is implemented by FIA fleet develop the Shark National Plan of Action (NPOA). Undertake awareness and training of the Skipper handbook in handling whale shark and Cetaceans and is used by FIA fleet. Develop a workplan to review by-catch logsheet reporting and observer data on milestone year 1 established. develop a workplan for establishing base line reference and target develop a workplan for technical assessment on one or more options be tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. develop a workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed Provide evidence to the fourth annual surveillance audit that the processed data available for the previous years are adequate Provide updated catch data tables in compliance report to SC and TCC review and assess NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. Undertake a survey of bycatch and discards details (species, sex, capture location, size and fate).

		Provide SPC the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet Coordinate the NFA/Industry consultation Will encourage the active participation of PNG FIA in regional meetings as part of the PNG delegations oversee and coordinate the participation of multi-stakeholders in the consultation on this condition
Milestone Year 4	Surveillance (~~2023~~ 2025): provide some evidence that the measures/strategies for whale sharks and cetaceans are being implemented successfully for the whole fishery Provide evidence of further implementation of the strategy for testing options for the following objectives: the ROP minimum standard data fields for whale sharks and cetaceans allow for a distinction between an interaction and potential infractions. collection of species-level and fate information for Mobula species Expected score: 75	
Client Action Plan	Activities:	**Year 1-3 Actions:** ETP Management Strategy is implemented and enforced by NFA ETP Management Strategy is implemented by FIA fleet Shark National Plan of Action (NPOA) is implemented. Awareness and training of the Skipper handbook in handling whale shark and Cetaceans and is used by FIA fleet ongoing. Develop a workplan to review by-catch logsheet reporting and observer data per outcomes and recommendations of surveillance audits. provide evidence that the 1-2 annual surveillance audits recommendations are implemented to demonstrate that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. establishing base line reference and target Implement the workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed Assess outcomes of the review of NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. Refine and update reporting requirement as per the recommendation of the survey of bycatch and discards details (species, sex, capture location, size and fate).

		Provide SPC the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet Implement 100% observer coverage on PNG FIA fleet and reporting of ETP strategy requirements by the PNG FIA tuna purse seine fleet is satisfactory. Updated catch data tables from at a minimum of 50% of the total sets for years 1-3 Undertake technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. Coordinate the NFA/Industry consultation and also multi-stakeholders consultation on the milestone. Provide updated catch data tables in compliance report to SC and TCC
	Expected outcome Year 3 4:	Technical report of assessment on tests on effectiveness of mitigation measures presented at NFA/Industry annual consultation PNG to inform outcome report to SC and TCC. And work with the subregional groups to make recommendations at the SC16 to progress work in addressing this PI. Compliance Monitoring Reports circulated for public information. Independent scientific body verification of the technical report of assessment on tests of options SC advice on the technical assessment on tests
	Responsible Party/ies:	**Lead Party** **FIA will:** Ensure the ETP Management Strategy is implemented by FIA fleet Ensure the Shark National Plan of Action (NPOA) is implemented. Co-organize with NFA the awareness and training in use of the Skipper handbook in handling whale shark and Cetaceans and is used by FIA fleet. Co-organise with NFA to develop a workplan to review by-catch logsheet reporting and observer data as per outcomes and recommendations of previous surveillance audits. provide evidence that the 1-2 annual surveillance audits recommendations are implemented to demonstrate that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. Support NFA in delivering the workplan to establish a base line reference and target Assist and cooperate with NFA to undertake technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery.

		Implement the workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed Assess outcomes of the review of NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. Refine and update reporting requirement as per the recommendation of the survey of bycatch and discards details (species, sex, capture location,o size and fate). Provide SPC the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet Undertake a technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. Implement 100% observer coverage on PNG FIA fleet and reporting of ETP strategy requirements by the PNG FIA tuna purse seine fleet is satisfactory. Support NFA to coordinate the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. Coordinate the NFA/Industry consultation and also multi-stakeholders consultation on the milestone. Provide updated catch data tables in compliance report to SC and TCC **Support Party** **NFA will:** ETP Management Strategy is implemented and enforced by NFA ETP Management Strategy is implemented by FIA fleet Shark National Plan of Action (NPOA) is implemented. Awareness and training of the Skipper handbook in handling whale shark and Cetaceans and is used by FIA fleet ongoing. Develop a workplan to review by-catch logsheet reporting and observer data per outcomes and recommendations of surveillance audits. Undertake technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. provide evidence that the 1-2 annual surveillance audits recommendations are implemented to demonstrate that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. Implement the workplan for establishing base line reference and target Implement the workplan to review national management plans and PNG's work with the other PNA parties and FFA parties to have this issue's subregional & regional workplan progressed

		Assess outcomes of the review of NFA observers monitoring report on by-catch by all FIA vessels and review of PNG observer standard operating procedure and guidelines in handling whale shark and cetaceans. Refine and update reporting requirement as per the recommendation of the survey of bycatch and discards details (species, sex, capture location, size and fate). Provide SPC the data required according to the regional logsheet and by-catch mitigation data collection framework and confirm compliance of good code of practice code by PNG FIA fleet Undertake a technical assessment on one or more options tested to prove the effectiveness of measures to mitigate incidence on whale sharks and cetaceans in the fishery. Implement 100% observer coverage on PNG FIA fleet and reporting of ETP strategy requirements by the PNG FIA tuna purse seine fleet is satisfactory. Facilitate and coordinate the annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review, as required. Coordinate the NFA/Industry consultation and also multi-stakeholders consultation on the milestone. Provide updated catch data tables in compliance report to SC and TCC
Milestone Year1 (Reassessment)	Surveillance (~~2024~~ 2026): provide some evidence that the measures/strategies for whale sharks and cetaceans are being implemented successfully for the whole fishery. Provide evidence that By the fourth surveillance audit: -provide some quantitative information that 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 Mobulid Rays - provide evidence that information is adequate to measure trends and support a strategy to measure trends and support a strategy to manage impacts to ETP species [Whale Sharks, cetaceans, and Mobulid rays] Expected score: 80	
Client Action Plan	Activities:	PNG FIA will provide evidence to the fourth annual surveillance audit that the processed data available for the previous years are adequate to measure trends and support a strategy to manage impacts of the fishery on ETP species. **Actions**: Analysis of data made available for the last three years to measure trends that support the ETP strategy to manage impacts on ETP species and ensure that ETP bycatch levels remain at target levels. Updated catch data tables from at a minimum of 80% of the total sets for years 1-4 provide evidence that the 1-3 annual surveillance audits recommendations are implemented to demonstrate that the amount of processed data available has been significantly improved and that protocols for data

		processing is working and effective to assure the provision of the data required in future years. SPC requested to provide analysis of the data provided in the last three years to profile the compliance with the good practice code of PNG FIA fleet. Report and discuss at NTMDP technical advisory committee meeting the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. Report and discuss at NFA/Industry meeting the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. Report and discuss at SC and TCC meeting the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery review the ETP Management Strategy and refine GAPs identified. Undertake a review of the surveillance audit 1-4 recommendations, measures and strategies in place to confirm implementation of ETP Management Strategy is working towards meeting measures objectives review the National Tuna Development & Management Plan(NTDMP), if required.
	Expected outcome Year 4 1 (Reassessment):	Analysis of data made available for the last three years undertaken and circulated and discussions held that measure trends that the ETP strategy is managing impacts on ETP species and ensuring ETP bycatch levels remain at target levels Demonstrated evidence that the 1-3 annual surveillance audits recommendations are implemented and have proven that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. SPC undertaken analysis of the data provided in the last three years and profile the compliance with the good practice code of PNG FIA fleet. NTMDP technical advisory committee considers and adopts one or more options tested and proven as effective measure(s) to mitigate setting on whale sharks and cetaceans in the fishery. NFA/Industry meeting convened and the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery is discussed. SC and TCC meeting noted the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery as reported in Compliance report ETP Management Strategy reviewed and GAPs identified refined. National Tuna Development & Management Plan(NTDMP) is reviewed, if required. Providence of Compliance Reports,

		Stock Assessment Reports
	Responsible Party/ies:	**Action Lead** **FIA will:** Seek analysis of data made available for the last three years undertaken and circulated and discussions held that measure trends that the ETP strategy is managing impacts on ETP species and ensuring ETP bycatch levels remain at target levels Demonstrated evidence that the 1-3 annual surveillance audits recommendations are implemented and have proven that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. Seek technical assistance for analysis of the data provided in the last three years and profiling of the compliance with the good practice code of PNG FIA fleet. Coordinate with NFA to convene the NTMDP technical advisory committee to discuss the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery and develop further work program as required. Co-organise with NFA a NFA/Industry consultation meeting be convened and the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery is discussed. Coordinate and support NFA to provide input into the Compliance report to SC and TCC on the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. Support NFA to plan and coordinate the review of ETP Management Strategy and refinement of GAPs identified. Support NFA to plan and coordinate the review of National Tuna Development & Management Plan(NTDMP), if required. **Action Partners** **NFA will:** Analyse the data made available for the last three years undertaken and circulated and discussions held that measure trends that the ETP strategy is managing impacts on ETP species and ensuring ETP bycatch levels remain at target levels Demonstrated evidence that the 1-3 annual surveillance audits recommendations are implemented and have proven that the amount of processed data available has been significantly improved and that protocols for data processing is working and effective to assure the provision of the data required in future years. Analyse the data provided in the last three years and profile the compliance with the good practice code of PNG FIA fleet.

		Convene the NTMDP technical advisory committee to discuss the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery and develop further work program as required. Convene a NFA/Industry consultation and discuss the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. Undertake Compliance report to SC and TCC on the outcomes of technical assessment on one or more test options to prove the effectiveness of measures to avoid setting on whale sharks and cetaceans in the fishery. Review of ETP Management Strategy and refinement of GAPs identified. Review of National Tuna Development & Management Plan(NTDMP), if required.
Consultation on condition	Letters of support from NFA in relation with action plan	
Progress on Condition (Year 1)	The assessment team did not receive any evidence of progress against the expected results for the interim milestone for year 1. The fishery did not present any evidence of mitigation workshop and training conducted, reporting protocols reviewed, and GAP analysis undertaken or a workplan to review observer data reporting. The fishery is behind target for the Year 1 Milestone. The fishery should continue work to provide improve the adequacy of information used to assess ETP impact and trends. The assessment team notes there has been development at the WCPFC related to this issue. The 2021 Technical Compliance Committee (TCC) Chair raised this issue of lack of clarity for whale shark/whale sets, stating that the "central issue with ROP pre-notifications and whale shark and cetacean interactions and/or infringements (comprising observer data related to interactions that had not been through a verification process) was the need to determine whether there were actual underlying issues, and that it was clear that there is a need to determine, prior to TCC18, how to address these." As a result, TCC passed a priority project specific task for 2022 to "Review and provide advice on improvements to the ROP minimum standard data fields for whale sharks and cetaceans – to allow for a distinction between an interaction and a possible infraction in the compliance case file system." The progress from the TCC action plan may aid the fishery in getting back on target for this milestone by the next surveillance.	
Progress on Condition (Year 2)	This condition has been closed. Please see Section 3.2 re-scoring performance indicators for an updated rationale.	
Status	Closed- Year 2 surveillance, please refer to section 3.2 Rescoring Performance Indicators.	
Additional information	Covid Derogation 6 applied This condition was originally attributed only to cetaceans for SI a, the conditions was modified during the first-year surveillance to address issues in both SI a and SI b. The updated scoring for the rationale is provided in the Appendix.	

3.3.5 Condition 2-4 (PI 2.4.1) – CLOSED this surveillance

Performance Indicator	2.4.1b 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	
Score	75 (FAD sets)	
Justification	While the overall risk and impact of FADs is small in scale of the WCPO coral reefs, there are still challenges in estimating the number of FAD deployed, active buoys, and tracking data. While there is information from the PNA FAD tracking programme, the information is still incomplete as FAD trajectories outside PNA waters are removed prior to submission to PNA (Escalle et al, 2020). There is limited understanding of impacts of sunken FADs (lost FADs that are not retrieved and not beached) (Banks and Zaharia 2020). Given these uncertainties, there is a lack of sufficient evidence for the assessment team to conclude 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; SG80 and SG100 are not met.	
Condition	2-4 (PI 2.4.1) FAD sets: By the fourth surveillance first year surveillance audit after re-assessment, provide evidence that the UoA is highly unlikely to reduce the structure and function of the VME habitats to a point where there would be serious or irreversible harm.	
Milestone Year 1	Surveillance (2021 2022): develop and provide a plan for investigating the impact of lost FADs on the structure and function of coral reefs. Expected score: 75	
Client Action Plan	Activities:	PNG FIA has already partially implemented a work programme to respond to this condition as part of its approach to reduce its ghost gear imprint on the ecosystem and reduce the risk of this element of the fishery causing permanent damage. PNG FIA has started to move ahead with its Marine Litter and Fishing Gear Management Policy which includes plans to move to biodegradable and non-entangling FADs. PNG FIA will actively support work towards the development and adoption of a workplan for research and investigation that derelict FADs are highly unlikely to reduce structure and function of coral reefs to a point where there be serious or irreversible harm. PNG FIA will actively work with NFA on measures and management strategy that enable adequate information availability for period of three years to measure trends and manage lost fishing gears impacts on coral reef. PNG FIA will lead in efforts to co-organize with NFA on country level work (ie management plan reviews) and also with other key stakeholders to progress and drive actions in response to identified strategy and measures in the fisheries management and development in the PNG. PNG FIA or industry Participation in Fisheries Management The National Tuna Management & Development Plan has sub-technical advisory committee which includes representative of industry. Accordingly, PNG FIA will work through the industry representative in the committee to encourage, motivate and ensure committee meetings are convened and workplans developed and progress respective actions related to this subject condition.

		FIA representative on the National Fisheries Board will encourage, motivate and ensure Board meetings give advice and direction to NFA workplans and strategy developed and respective actions related to this subject condition progressed with target schedules. Actions Year 1 Organise in 2020 a NFA-Industry consultation meeting to discuss this issue and develop a plan for investigating the impact of lost FADs on the structure and function of coral reefs. Including identifying collaborating research partner to undertake the investigations. Work with all FIA member fleet stakeholders to refine the PNG FIA policy and workplan aimed at reducing the risk of derelict FADs damaging coral reefs throughout the WCPFO. Identify and work with all other stakeholders to define a plan aimed at reducing the risk of derelict FADs damaging coral reefs throughout the WCPFO. Review observer regulation on MARPOL (GEN 6 Form) and profile compliance Develop workplan for establishing onshore landing sites for derelict FADs, damaged gears and plastic materials. Develop workplan to develop PNG FIA register of onshore landings of derelict FADs, damaged gears and plastic materials and link reporting protocol to NFA FAD management program. This includes gathering more information on lost FADs and examining how they may be tracked. Develop program plan for continued development and practical implementation of biodegradable FADs. Develop workplan for technical investigation on the impact of lost FADs on structure and function of coral reefs Cooperative work program with relevant ENGOs in the PNG and region to test the difference in the impacts of biodegradable and traditional non -entangling FADs in selected locations. Reaching out to ENGOs in other countries to determine the potential risk to corals from derelict FADs. Monitoring the results of the any current project underway and examining if appropriate results to be replicated in PNG fishery. Present at the first annual audit a report that presents the defined strategy, the resources allocated for its implementation and any results to-date. Report workplan and any findings to date to SC and TCC
	Expected outcome Year 1:	NFA-Industry consultation convened to discuss this issue A workplan established for investigating the impact of lost FADs on the structure and function of coral reefs. Including identifying collaborating research partner to undertake the investigations. PNG FIA Marine Litter and Fishing Gear Management Policy adopted and implemented by FIA member fleet Review of observer regulation on MARPOL (GEN 6 Form) undertaken and compliance profiled

		Workplan for establishing onshore landing sites and plan for landing and re-use for derelict FADs, damaged gears and plastic materials established. workplan to develop PNG FIA register of onshore landings of derelict FADs, damaged gears and plastic materials and reporting protocol to NFA FAD management and observer program established. program plan developed for practical implementation of biodegradable FADs. workplan for technical research and investigation on the impact of lost FADs on structure and function of coral reefs established. Investigation Plan Project scope developed Cooperative work program established with relevant ENGOs to monitor the tests and difference of biodegradable and traditional non -entangling FADs in selected locations. Monitoring status of results reported on any current project underway with analysis and examination of its applicability in PNG fishery. At the first annual audit a report that presents the defined strategy, the resources allocated for its implementation and any results to-date. Report to workplan and any findings to date to SC and TCC Meetings Records
	Responsible Party/ies:	Lead Action FIA will: Co-organise with NFA a NFA-Industry consultation convened to discuss this issue Co-organise with NFA a workplan for investigating the impact of lost FADs on the structure and function of coral reefs. Including identifying collaborating specialist scientific research partner . Adopt the PNG FIA Marine Litter and Fishing Gear Management Policy and initiate plans for implementation by FIA member fleet Assist NFA and coordinate with NFA on the review of observer regulation on MARPOL (GEN 6 Form) and compliance profiled Adopt a workplan for establishing onshore landing sites and plan for landing and re-use for derelict FADs, damaged gears and plastic materials established. Adopt a workplan to develop PNG FIA register of onshore landings of derelict FADs, damaged gears and plastic materials and cooperate with NFA to link reporting protocol to NFA FAD management and observer program. Adopt program plan for continued practical implementation of biodegradable FADs by fleet operations. Co-organise with NFA a workplan for technical research and investigation on the impact of lost FADs on structure and function of coral reefs.Includes an Investigation project scope developed Secure cooperative work program with selected relevant ENGOs to monitor the tests difference of biodegradable and traditional non -entangling FADs in selected locations.

		Monitor status of results on any current project underway with analysis and examination of its applicability in PNG fishery. Present a report at the first annual audit on defined strategy, the resources allocated for its implementation and any results to-date. Co-organise with NFA report on workplan and any findings to date to SC and TCC prepare meetings records Partner Action NFA will: convene a NFA-Industry consultation convened to discuss this issue establish a workplan for investigating the impact of lost FADs on the structure and function of coral reefs. Including identifying collaborating research partner to undertake the investigations. Review observer regulation on MARPOL (GEN 6 Form) and compliance profiled support PNG FIA develop its register of onshore landings of derelict FADs, damaged gears and plastic materials and reporting protocol to NFA FAD management and observer program established. Support PNG FIA program on practical implementation of biodegradable FADs. Establish workplan for technical research and investigation on the impact of lost FADs on structure and function of coral reefs. Including Investigation/research project scope Support FIA efforts to cooperate relevant ENGOs to monitor the tests difference of biodegradable and traditional non -entangling FADs in selected locations. Support PNG FIA to monitoring status of results from any project with analysis and examination of its applicability in PNG fishery. Support PNG FIA's report to be presented at the first annual audit that defines investigation/research strategy, the resources allocated for its implementation and any results to-date. Report workplan on this condition and any findings to date to SC and TCC Support prepare meetings Records
Milestone Year 2 and 3	Surveillance (2023 and 2024): provide some information on the number of FADs lost by the fishery and the materials used in their construction. Expected score: 75	
Client Action Plan	Activities:	PNG FIA will monitor the implementation of the strategy. These includes; Actions Years 2: Implementation of PNG FIA Marine Litter and Fishing Gear Management Policy by FIA member fleet. Work with all FIA member fleet stakeholders to localize and operationalize the Marine Litter and Fishing Gear Management Policy aimed at reducing the risk of derelict FADs damaging coral reefs.

		Onshore sites/depots for landing derelict FADs, damaged gears and plastic materials secured and operational. develop PNG FIA registry of onshore landings of derelict FADs, damaged gears and plastic materials and link reporting to NFA FAD management and observer program is operational. PNG FIA's fleet FAD monitoring status report is reconciled with NFA FAD register list. Practical implementation of biodegradable FADs continued. Technical research and investigation on the impact of lost FADs on structure and function of coral reefs underway. Cooperative work with relevant ENGOs in trialing difference of biodegradable and traditional non -entangling FADs in selected locations underway. Identifying relevant regional/international project underway and using its analysis and examination for application in PNG fishery. At the second annual audit a report that presents the strategy is underway and with adjustments as required. FIA test and operationalize its reporting database and gathering information on lost FADs and tracking systems incorporated.
	Expected outcome Year 2:	PNG FIA Marine Litter and Fishing Gear Management Policy is implemented by PNG FIA and member fleet. Onshore sites/depots for landing derelict FADs, damaged gears and plastic materials operational. Reconciliation report of PNG FIA's fleet FAD monitoring status and NFA FAD register list. Practical implementation of biodegradable FADs continued. FIA reporting database and gathering information on lost FADs and tracking systems is operational. PNG FIA registry of onshore landings of derelict FADs, damaged gears and plastic materials and link reporting to NFA FAD management and observer program is operational. Technical research and investigation on the impact of lost FADs on structure and function of coral reefs underway. Report that presents the strategy is underway and with adjustments as required. Update in NFA FAD reports Report of workplan implementation and any findings to date to SC and TCC
	Responsible Party/ies:	Action Lead FIA will: Actively implement the PNG FIA Marine Litter and Fishing Gear Management Policy on its PNG FIA member fleet.

		Ensure the operationalization of onshore sites/depots for landing derelict FADs, damaged gears and plastic materials. Undertake the reconciliation of PNG FIA's fleet FAD monitoring status, against the NFA FAD register list. Will progress the practical implementation of biodegradable FADs continued. Work with NFA to operationalize the FIA reporting database and gathering of information on lost FADs and tracking systems. Work with NFA to operationalize the PNG FIA registry of onshore landings of derelict FADs, damaged gears and plastic materials and link reporting to NFA FAD management and observer program. Support and work with NFA to coordinate and administer the technical research and investigation on the impact of lost FADs on structure and function of coral reefs. Undertake the report of on progress and effectiveness of the strategy is underway. Assist and coordinate with NFA in updating strategy implementation in NFA FAD reports Assist and coordinate with NFA in compiling report of the strategy workplan and its implementation progress update and any findings to date to SC and TCC Action Partner NFA will: Support PNG FIA as required in the implementation of the PNG FIA Marine Litter and Fishing Gear Management Policy by the member fleet. Support FIA to reconcile PNG FIA's fleet FAD monitoring status and NFA FAD register list. Support FIA where required in the practical implementation of biodegradable FADs program. Assist FIA develop its reporting database and information gathering protocol on lost FADs and tracking systems. Assist FIA develop FIA registry of onshore landings of derelict FADs, damaged gears and plastic materials and link reporting to NFA FAD management and observer program is operational. Oversee the technical research and investigation on the impact of lost FADs on structure and function of coral reefs is underway. Undertake the report that presents the strategy is underway. Update strategy progress in NFA FAD reports Report of workplan implementation and any findings to date to SC and TCC
Milestone Year 4	Surveillance (2024): provide an initial evaluation of the potential impacts of FADs lost by vessels in the fishery on coral reefs, and of any additional measures that might be needed if this impact is substantial. Expected score: 75	

Client Action Plan	Activities:	Actions Year 3: report on the full implementation of the FIA Marine Litter and Fishing Gear Management Policy making sure there is information collected and results available to analyse for evidence. present to the third annual surveillance audit a report that details progress and that actions are continuing report on the findings of reconciliation of PNG FIA's fleet FAD monitoring status and NFA FAD register list. Report status of FIA fleet rollout of biodegradable FADs program. Monitoring report of FIA reporting database and information gathering protocol on lost FADs and tracking systems and results update. Monitoring report of FIA register of onshore landings of derelict FADs, damaged gears and plastic materials and results update. Monitoring report of the technical research and investigation on the impact of lost FADs on structure and function of coral reefs and results update. Monitoring report of the strategy and results update. Monitoring report of the strategy and results updated in NFA FAD reports Report of workplan implementation and any findings to date to SC and TCC.
	Expected outcome Year 4:	report on the full implementation of the FIA Marine Litter and Fishing Gear Management Policy results provided. status on progress and that actions are continuing from year 1-3 findings of reconciliation of PNG FIA's fleet FAD monitoring status and NFA FAD register list. status update of FIA fleet rollout of biodegradable FADs program. Status update on FIA reporting database and information gathering protocol on lost FADs and tracking systems and results update. Status update FIA register of onshore landings of derelict FADs, damaged gears and plastic materials and results update. Status update of the technical research and investigation on the impact of lost FADs on structure and function of coral reefs and results update. Monitoring report of the strategy and results updated in NFA FAD reports Report of workplan implementation and any findings to date to SC and TCC.
	Responsible Party/ies:	Action Lead FIA will: report on the full implementation of the FIA Marine Litter and Fishing Gear Management Policy results provided. Report status on progress and that actions are continuing from year 1-3 Report findings of reconciliation of PNG FIA's fleet FAD monitoring status and NFA FAD register list.

		Report status update of FIA fleet rollout of biodegradable FADs program. Report Status update on FIA reporting database and information gathering protocol on lost FADs and tracking systems and results update. Report Status update FIA register of onshore landings of derelict FADs, damaged gears and plastic materials and results update. Assist NFA and coordinate the reporting of status update of the technical research and investigation on the impact of lost FADs on structure and function of coral reefs and any results. Assist NFA and coordinate monitoring report of the strategy and results updated in NFA FAD reports Assist NFA and coordinate the report of workplan implementation and any findings to date to SC and TCC. Action Partner NFA will: Assist FIA in reporting the status on progress and that actions are continuing from year 1-3 Assist FIA report the findings of reconciliation of PNG FIA's fleet FAD monitoring status and NFA FAD register list. Assist FIA on status report on FIA reporting database and information gathering protocol on lost FADs and tracking systems and results update. Report on status update of the technical research and investigation on the impact of lost FADs on structure and function of coral reefs and any results to date. Report monitoring report on strategy and results updated in NFA FAD reports Report workplan implementation and any findings to date to SC and TCC.
Milestone Year 1 after Re-assessment	Surveillance (): provide evidence that the UoA is highly unlikely to reduce structure and function of the coral reefs to a point where there would be serious or irreversible harm. Expected score: 80	
Client Action Plan	Activities:	PNG FIA will monitor the implementation of the strategy and work with NFA to provide some evidence towards milestone year 4. And that systems and data collection protocol are in place and will continue into the future Actions Year 4: Present and circulated investigation and analysis finding for review FIA present implementation report on FIA Marine Litter and Fishing Gear Management Policy and make adjustments where required and recommended in previous surveillance audits Annual NFA/Industry consultation to discuss findings Investigation findings reported at SC and TCC

	Expected outcome Year 4:	investigation and analysis findings is presented and circulated FIA implementation on FIA Marine Litter and Fishing Gear Management Policy is reviewed and adjustments undertaken Technical investigation and research findings and FIA Policy implementation presented at annual NFA/Industry consultation Investigation findings reported at SC and TCC
	Responsible Party/ies:	Action Lead FIA will: Assist NFA in presenting and circulating the technical investigation and analysis findings Coordinate the review of FIA implementation on FIA Marine Litter and Fishing Gear Management Policy and ensure adjustments undertaken as required Assist NFA and co-organize annual NFA/industry consultation and assist coordinate the presentation of the technical investigation and research findings and FIA Policy implementation Support NFA in reporting the findings of the technical investigation and research at SC and TCC Action partners NFA will: Report and circulate the technical investigation and analysis findings Support FIA in the review of FIA implementation on FIA Marine Litter and Fishing Gear Management Policy organize annual NFA/industry consultation and assist coordinate the presentation of the technical investigation and research findings and FIA Policy implementation report the findings of the technical investigation and research at SC and TCC
Consultation on condition	Letters of support from NFA in relation with action plan	
Progress on Condition (Year 1)	In 2021 the fishery contacted stakeholders, among the ISSF to explore collaboration on FAD management for the fishery. PNG FIA conducts annual internal audits against the Responsible Sourcing Policy (RSP), the audit includes review of implementation of the PNG FAD management plan, which includes marking, monitoring and reporting of drifting and anchored FADs, use of electronic buoys attached to FADs for electronic tracking. The internal audit report indicates that PNG-FIA members are "[…] using Fishing Aggregating devices are highly following PNG FAD management plan each drifting FAD or anchored FAD shall be marked, monitored, reported, controlled, and recorded on the e-logbook. Also, FIA PNG members are using partial or fully biodegradable material for the construction of FADs (cotton ropes and canvas, manila hemp, sisal, coconut fiber) so that they degrade without causing ecosystem impact (ISSF, GTA, Tuna NGO practices) [….] Electronic buoys are attached to FADs for electronic tracking and easily recover and fish of FADs. Also, FAD location and last position in case FADs are lost, always is	

	reported to the PNG authority. Only one company is still not marking fishing gear (FADs) because they rely fully on the buoy. [..]" Although not all members have perfect compliance in the internal audit, the results of the internal audits indicate progress on the implementation of the FAD management plan. In addition, the deployment of FADs and sets on FADs has decreased for PNG-FIA vessels, where <6.5% of sets where on drifting FADs, and 1% on anchored FADs (from 2015-2021). The fishery has yet to develop workplan for technical investigation on the impact of lost FADs on structure and function of coral reefs, however, progress on monitoring and tracking of FADs and reduction in use of FADs shows progress towards closing this condition
Progress on Condition **(Year 2)**	This condition has been closed. Please see section 3.2, Re-scoring Performance Indicators for an updated rationale.
Status	Closed
Additional information	

3.3.6 Condition 2-5 PI (2.4.2) – Habitats management

Performance Indicator	2.4.2d 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.	
Score	PI 2.4.2 -75 (FAD sets)	
Justification	The information from WCPFC 2020 regarding compliance with management requirements is considered qualitative evidence that the UoA complies with its management requirements to protect VMEs, meeting SG60 requirements. Several requirements outlined in CMM 2021-01 will be enforced in January 2024, thus at the moment there is no quantitative evidence that the UoA is complying with these requirements, the SG80 is not met.	
Conditions	2-5 (PI 2.4.2) - FAD sets: By the ~~second~~ third surveillance audit provide 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.	
Milestone Year 1 (derogation)	Surveillance (~~2021~~ 2022): Provide information on the level of compliance with the requirement to report lost FADs and the impediments to full compliance. Expected score: PI 2.4.2- 75	
Client Action Plan	Activities:	PNG FIA will continue to implement the strategy outlined in the above (2.4.1) conditions. Actions Year 1 • FIA will work with members and stakeholders to refine and progress its partial strategy (FIA Non-entangling & biodegradable FADs strategy) aimed at reducing the risk of derelict FADs damaging coral reefs • continue program of reconciliation and auditing PNG FIA's fleet FAD monitoring program and NFA FAD register list. Review and strengthen NFA FAD policy on FAD out /find in approach. • Operationalize FIA reporting database and information gathering protocol on lost FADs and tracking systems and results update. • Continue on the technical research and investigation on the impact of lost FADs on structure and function of coral reefs and any results to date. • The development and practical implementation of biodegradable FADs program continued. • Cooperative work with relevant ENGOs to test the difference in the impacts of biodegradable and traditional non-entangling FADs in selected locations. • Reaching out to ENGOs in other countries to determine the potential risk to corals from derelict FADs. • NFA/Industry meet to develop a code of conduct for FAD deployment and replacement • Continuing the FIA program on gathering data and information on lost and discharged fishing gears and landings at designated shore based depots

	Expected outcome Year 1:	Annual report on level of implementation on non-entangling and biodegradable FADs by members update on website. Annual status report on FAD in/FAD out reconciliation updated on FIA website FIA protocol to report tracking and lost FADs is trialled Annual update on implementation of landings of lost and discharged fishing gears at designated shore based depots on FIA website
	Responsible Party/ies:	Action Lead FIA will: implement and enforce the FIA Non-entangling & biodegradable FAD policy and Marine Litter and Fishing Gear Management Policy. Ensure fleet provide all required data. Provide implementation update report. Action partners NFA will: Ensure validity, continuity and quality of the data. Ensure the data complies with the good practice code draft Compliance report to SC and TCC provide assistance to technical investigation and research projects for trials and tests at sea
Milestone Year 2	Surveillance (2023): provide evidence that there is compliance with the requirement for vessels in the UoA to report all lost FADs. Develop and implement a plan to report lost FADs within the UoA and implement other requirements as outlined in CMM 2021-01. Expected score: PI 2.4.2 - 75	
Client Action Plan	Activities:	PNG FIA will continue to implement the strategy outlined in the above (2.4.1) conditions. Actions Year 1 FIA will work with members and stakeholders to refine and progress its partial strategy (FIA Non-entangling & biodegradable FADs strategy) aimed at reducing the risk of derelict FADs damaging coral reefs continue program of reconciliation and auditing PNG FIA's fleet FAD monitoring program and NFA FAD register list. Review and strengthen NFA FAD policy on FAD out /find in approach. Operationalize FIA reporting database and information gathering protocol on lost FADs and tracking systems and results update. Continue on the technical research and investigation on the impact of lost FADs on structure and function of coral reefs and any results to date. The development and practical implementation of biodegradable FADs program continued.

		Cooperative work with relevant ENGOs to test the difference in the impacts of biodegradable and traditional non-entangling FADs in selected locations. Reaching out to ENGOs in other countries to determine the potential risk to corals from derelict FADs. NFA/Industry meet to develop a code of conduct for FAD deployment and replacement Continuing the FIA program on gathering data and information on lost and discharged fishing gears and landings at designated shorebased depots
	Expected outcome Year ~~1~~ 2:	Annual report on level of implementation on non-entangling and biodegradable FADs by members update on website. Annual status report on FAD in/FAD out reconciliation updated on FIA website FIA protocol to report tracking and lost FADs is trailled Annual update on implementation of landings of lost and discharged fishing gears at designated shore based depots on FIA website
	Responsible Party/ies:	Action Lead FIA will : implement and enforce the FIA Non-entangling & biodegradable FAD policy and Marine Litter and Fishing Gear Management Policy. Ensure fleet provide all required data. Provide implementation update report . Action partners NFA will: Ensure validity, continuity and quality of the data. Ensure the data complies with the good practice cod draft Compliance report to SC and TCC provide assistance to technical investigation and research projects for trials and tests at sea
Milestone Year 3	Surveillance (2024): provide **quantitative evidence** that there is compliance with the requirement for vessels in the UoA to report all lost FADs and other requirements *including use of non-entangling FADs* to be implemented by January 1st, 2024 as outlined in CMM 2021-01. Expected score: PI 2.4.2- 80	
Client Action Plan	Activities:	PNG FIA will continue to implement the strategy outlined in the above (2.4.1 and 2.4.2) conditions. Also refer to the actions in Years 2, 3 & 4 above. Actions Years 2-3: a partial strategy has been defined and progressed to provide information on the level of compliance with the requirement to report lost FADs and the impediments to full compliance

		full implementation of the FIA Marine Litter and Fishing Gear Management Policy undertaken. PNG FIA's fleet implementing FAD monitoring and reporting. And reconciliation against NFA FAD register list. status update of FIA fleet rollout of biodegradable FADs program. Status update on FIA reporting database and information gathering protocol on lost FADs and tracking systems and results update. Status update FIA register of onshore landings of derelict FADs, damaged gears and plastic materials and results update. status update of the technical research and investigation on the impact of lost FADs on structure and function of coral reefs and any results. ensure strategy meet the code of best practice
	Expected outcome Year ~~2~~ 3:	Annual report on fleet performance on reporting and retrieving lost FADs policy updated on FIA website FIA present the second and third annual audit with a report that discuss the defined FIA Non-entangling & biodegradable FADs strategy, implementation and any results to-date Observer report on the performance of FIA Non-entangling & biodegradable FADs strategy NFA to incorporate report in Compliance Reports to SC and TCC NFA and SPC will provide a report on the potential damage to coral reefs from derelict FADs that indicates that the risk has been significantly lowered due to the strategy in place. Report of lost FAD, retrieval and landings is linked to NFA FAD registry Reports.
	Responsible Party/ies:	Action Lead FIA will: Assist NFA in presenting and circulating the technical investigation and analysis findings Coordinate the review of FIA implementation on FIA Marine Litter and Fishing Gear Management Policy and ensure adjustments undertaken as required Assist NFA and co-organize annual NFA/industry consultation and assist coordinate the presentation of the technical investigation and research findings and FIA Policy implementation Support NFA in reporting the findings of the technical investigation and research at SC and TCC Action partners NFA will: Report and circulate the technical investigation and analysis findings Support FIA in the review of FIA implementation on FIA Marine Litter and Fishing Gear Management Policy

		organize annual NFA/industry consultation and assist coordinate the presentation of the technical investigation and research findings and FIA Policy implementation report the findings of the technical investigation and research at SC and TCC
Consultation on condition	Letters of support from NFA in relation with action plan	
Progress on Condition (Year 1)	During the audit the assessment team received information indicating that the number of FAD sets for the fishery had decreased since the initial audit for certification. From 2015-2021 where <6.5% of sets where on drifting FADs, and 1% on anchored FADs. In 2021 the fishery contacted stakeholders, among them ISSF to explore collaboration on FAD management for the fishery. PNG FIA conducts annual internal audits against the Responsible Sourcing Policy (RSP), the audit includes review of implementation of the PNG FAD management plan, which includes marking, monitoring and reporting of drifting and anchored FADs, use of electronic buoys attached to FADs for electronic tracking. The internal audit report indicates that PNG-FIA members are "[…] using Fishing Aggregating devices are highly following PNG FAD management plan each drifting FAD or anchored FAD shall be marked, monitored, reported, controlled, and recorded on the e-logbook. Also, FIA PNG members are using partial or fully biodegradable material for the construction of FADs (cotton ropes and canvas, manila hemp, sisal, coconut fiber) so that they degrade without causing ecosystem impact (ISSF, GTA, Tuna NGO practices) [….] Electronic buoys are attached to FADs for electronic tracking and easily recover and fish of FADs. Also, FAD location and last position in case FADs are lost, always is reported to the PNG authority. Only one company is still not marking fishing gear (FADs) because they rely fully on the buoy. [..]" The annual inspections provide information on implementation of the FAD management plan, which indicates progress on electronic tracking, monitoring and use of biodegradable FADs, the fishery is on track to close the condition. It's important that next surveillance the fishery provides more information on the output of the efforts for tracking FADs.	
Progress on Condition (Year 2)	The milestone for year 2 states that the client will provide evidence that there is compliance with the requirement for vessels in the UoA to report all lost FADs and develop and implement a plan to report lost FADs within the UoA and implement other requirements as outlined in CMM 2021-01. The client provided the assessment team with several sources of data highlighting the reduction in the use of FADs for the fleet (see Figure 1. and Table 7 under the re-scored 2.4.1), which can be considered part of a management strategy. Vessels that do use FADs are implementing tracking buoys and evidence continues to corroborate the findings from Year 1 that members are compliant with marking, tracking, and reporting requirements where applicable, though the assessment team was not presented with evidence considered "verifiable" in some cases, it was more anecdotal use of buoys and reporting/registration. The data on FADs deployed was provided through 2022 and the assessment team will continue to monitor FAD use and request records of reported lost FADs and evidence of registration until the condition is scheduled to close. The team reiterated to the client that in year 3 proof of use of non-entangling FADs will be required.	
Status	On Target	
Additional information	Condition extended on account of Covid Derogation; The team reiterated to the client that in year 3 proof of use of non-entangling FADs will be required.	

3.3.7 Condition 2-6- PI (2.4.3) – Habitats information

Performance Indicator	2.4.3b 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.	
Score	FADs: 75	
Justification	There is sufficient information on loss rates and FAD tracks to know that many drifting FADs become beached on coral reefs (Escalle 2019; Banks and Zaharia 2020). The potential impacts of such beaching are also broadly understood and the impacts of other marine debris (that would have similar impacts) has been incorporated in an analysis of risks to coral reefs (Burke et al. 2012). There is reliable information on the spatial locations of fishing, but there is still uncertainty on the number of active FADs per vessel per month, the number of new FADs deployed per year, locations of FADs that are lost and become beached. This limited reliable information on the spatial extent, timing and location of FAD interactions with coral reefs hinders a full understanding of the nature of the impacts of the gear on these habitats.	
Condition	2-6 (PI 2.4.3)- For FAD sets: By the third fourth surveillance audit, provide evidence that the information available 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.	
Milestone Year 1 (derogation)	Surveillance (~~2021~~ 2022): develop and provide a plan for determining the spatial extent, timing and location of FAD interactions with coral reefs. Provide a summary of the current understanding of lost FADs (both anchored and drifting) in UoA waters, including gaps in information that inhibit the ability to identify the spatial extent and timing of potential impacts of FADs on habitats in the UoA. Expected score: 75	
Client Action Plan	Activities:	These are linked to Condition 2.PNG FIA will continue to implement the strategy outlined in the above (2.4.2) conditions. Also refer to the actions in Years 1,2 & 3 above. Actions Year 1 Undertake NFA/industry consultation to provide evidence that the partial strategy noted in previous condition 2 includes the approach to improving the information base. NFA/industry consult with SPC to discuss and develop a plan for determining the spatial extent, timing and location of FAD interactions with coral reefs. Registration of FADs process continued to be implemented
	Expected outcome Year 1:	FIA and NFA will present the first annual audit with a report that presents that the partial strategy includes the approach to improving the information base. Discussion outcome of annual audit provided into NFA FAD reports
	Responsible Party/ies:	Lead Action FIA will:

		implement and enforce the FIA Non-entangling & biodegradable FAD policy and Marine Litter and Fishing Gear Management Policy. Participate in all meetings to monitor the implementation of defined tasks. Ensure validity, continuity and quality of the data. Ensure the data complies with the good practice code draft Compliance report to SC and TCC Action support NFA will : Ensure fleet provide all required data. Provide implementation update report . Technical assistance to verify the development of the plan for determining the spatial extent, timing and location of FAD interactions with coral reefs.
Milestone Year 2	Surveillance (2023): provide information on the number of FADs lost by the fishery that might interact with coral reefs. Develop and provide a plan for determining the spatial extent, timing and location of FAD interactions with coral reefs. Expected score: 75	
Client Action Plan	Activities:	These are linked to Condition 2.PNG FIA will continue to implement the strategy outlined in the above (2.4.2) conditions. Also refer to the actions in Years 1,2 & 3 above. Actions Year 1 Undertake NFA/industry consultation to provide evidence that the partial strategy noted in previous condition 2 includes the approach to improving the information base. NFA/industry consult with SPC to discuss and develop a plan for determining the spatial extent, timing and location of FAD interactions with coral reefs. Registration of FADs process continued to be implemented
	Expected outcome Year ~~1~~ 2:	FIA and NFA will present the first annual audit with a report that presents that the partial strategy includes the approach to improving the information base. Discussion outcome of annual audit provided into NFA FAD reports
	Responsible Party/ies:	Lead Action FIA will: implement and enforce the FIA Non-entangling & biodegradable FAD policy and Marine Litter and Fishing Gear Management Policy. Participate in all meetings to monitor the implementation of defined tasks. Ensure validity, continuity and quality of the data. Ensure the data complies with the good practice code draft Compliance report to SC and TCC

		Action support NFA will : Ensure fleet provide all required data. Provide implementation update report . Technical assistance to verify the development of the plan for determining the spatial extent, timing and location of FAD interactions with coral reefs.
Milestone Year 3	Surveillance (~~2022~~ 2024): By the third surveillance audit, provide ~~information on the spatial extent, timing, and location of FAD interactions with coral reefs~~ *an update to the status of FAD use, loss, and tracking in the fleet. This should include any non-confidential data on FAD locations and losses as well as the number and extent of vessel participation in the PNA FAD Tracking Programme. There should at minimum be a verifiable numerical estimate of lost FADs from the UoA in the most recent year available and evidence that they are being reported to proper authorities.* ~~provide information on the number of FADs lost by the fishery that might interact with coral reefs.~~ Expected score: 75 *(Score may increase and condition close if continued/sustained reduction in FAD sets combined with information on loss numbers and extent of tracking buoy use)*	
Client Action Plan	Activities:	Reconciliation NFA FAD register and fleet FAD monitoring report FIA to report on FAD lost status FIA to report on retrieval and landings status from the FIA FAD registry at onshore depots. NFA to ask SPC and PNA to provide FAD tracking reports.
	Expected outcome Year 2 3:	FAD registry reports from SPC. NFA to present report providing evidence to the second annual surveillance that information is being collected.
	Responsible Party/ies:	Lead Action FIA will: • implement and enforce the FIA Non-entangling & biodegradable FAD policy and Marine Litter and Fishing Gear Management Policy. Participate in all meetings to monitor the implementation of defined tasks. • Ensure validity, continuity and quality of the data. • Ensure the data complies with the good practice code Action partners NFA will : • Ensure fleet provide all required data. • Provide implementation update report . • Ensure the data complies with the good practice code • draft Compliance report to SC and TCC

Milestone Year ~~3~~ 4	*[If not closed in year 3]* Surveillance (~~2023~~ 2025): By the ~~third~~ fourth surveillance audit, *confirm that the fleet is using tracking buoys on FADs, the tracking information is available for management advice, and losses of FADs (both with and without buoys, if applicable) are reported to relevant authorities.* ~~provide information on the spatial extent, timing, and location of FAD interactions with coral reefs~~. ~~Proposed score 80.~~ Expected score: 80	
Client Action Plan	Activities:	FAD tracking reports sourced from SPC and PNA to provide FIA will work with NFA to provide evidence to the second annual surveillance that information is being collected. The collected information will be analysed with the identification of the main impacts of derelict FADs on coral reefs, and an understanding of the spatial extent and timing of the interactions.
	Expected outcome Year 3 4:	FAD registry reports from SPC. NFA/FIA will present the second and third annual audits with a report that presents that the information is being collected. NFA/FIA will present a report for the fourth annual surveillance that provides evidences that the collected information has been analysed.
	Responsible Party/ies:	Lead Action FIA will: implement and enforce the FIA Non-entangling & biodegradable FAD policy and Marine Litter and Fishing Gear Management Policy. Participate in all meetings to monitor the implementation of defined tasks. Ensure validity, continuity and quality of the data. Ensure the data complies with the good practice code Action Partner NFA will: Ensure fleet provide all required data. Provide implementation update report . Ensure the data complies with the good practice code draft Compliance report to SC and TCC analyse and report of investigations on determining the spatial extent, timing and location of FAD interactions with coral reefs.
Consultation on condition	Letters of support from NFA in relation with action plan	
Progress on Condition (Year 1)	During the audit the assessment team received information indicating that the number of FAD sets for the fishery had decreased since the initial audit for certification. From 2015-2021 where <6.5% of sets where on drifting FADs, and 1% on anchored FADs. PNG FIA conducts annual internal audits against the Responsible Sourcing Policy (RSP), the audit includes review of implementation of the PNG FAD management plan. The annual	

	inspections provide information on implementation of the FAD management plan, which indicates progress on electronic tracking, monitoring and use of biodegradable FADs. The fishery has yet to develop a plan on to improve the understanding of potential impacts of FADs and coral reefs.
Progress on Condition (Year 2)	The milestone for year 2 states that the client will provide information on the number of FADs lost by the fishery that might interact with coral reefs and develop and provide a plan for determining the spatial extent, timing and location of FAD interactions with coral reefs. The client provided the assessment team with several sources of data highlighting the reduction in the use of FADs for the fleet, which equates to a reduction in lost dFADs. Moreover, vessels in the UoC that do use FADs are implementing tracking buoys which minimize loss and many are involved in or preparing to join collaborative FAD research with the SPC. A paper by Escalle et al. titled "Spatial and temporal description of drifting FAD use in the WCPO derived from analyses of the FAD tracking programmes and observer data" was presented by the SPC to the WCPFC in late July 2023 and includes a thorough analysis of PNA FAD tracking and observer program data from 2016 through 2023. This research highlighted where and when FADs are being used and found that more than 44% of buoys were estimated to be abandoned, 11% stranded, and 37% had an uncertain fate. These numbers are not specific to the UoA. Higher levels of stranding events were detected in Kiribati Gilbert Islands, Nauru, Tuvalu, PNG and the Solomon Islands. Potential hotspots of buoy deactivations were also detected in the south of the WCPO and in the high seas area in the northeast of the WCPO. The information provided by this research will inform management by providing options for reporting the number of active buoys per vessel; as well as the number of dFAD/buoys deployed, retrieved and deactivated or lost at sea per vessel per year. The client group also provided the assessment team with a FAD research plan documenting the progress of collaboration with NFA and SPC as well as surveys of fleet skippers documenting the number of buoys purchased and deployed from 2020–2023 and the number of dFADs and aFADs deployed by each fishing company through 2022.
Status	On Target
Additional information	Covid Derogation 6 applied; Client is notified that Year 3 milestone for this condition was revised.

3.3.8 Condition 2-7 Ecosystems (PI 2.5.1 – CLOSED in Year 1 [2022] Surveillance)

PI 2.5.1	The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function.	
Score	FADs: 60	
Justification	See rationale for PI 2.5.1	
Condition	For FAD sets: By year four the fishery must provide evidence that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	
Milestone Year 1	Surveillance (2021): By the first surveillance audit, develop a plan with actions that could provide evidence as to the likelihood that FADS could disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. Expected score: 60	
Client Action Plan	Activities:	FIA and NFA will review literature on: the “ecological trap” hypothesis of FADs on the behaviour, feeding and migration of key elements of the ecosystem; indications of other potential impacts of FADs on key elements of the ecosystem NFA/Industry Consultation consultation with input from SPC to develop of an Action Plan to provide evidence on likelihood of FAD disruption on the ecosystem. NFA/FIA will define its approach and a workplan to: investigating the potential impact of the UOA FADs on the behaviour, feeding and migration of key elements of the ecosystem; and providing indications of the other potential impacts of UOA FADs on key elements of the ecosystem. Seek collaboration from SPC and partner scientific bodies to investigate potential impact
	Expected outcome Year 1:	Report on findings of literature review. NFA with support from SPC will define the approach to: investigating the potential impact of the UoA FADs on the behaviour, feeding and migration of key elements of the ecosystem
	Responsible Party/ies:	Lead Action FIA will: Co-organise and participate in all meetings to monitor the implementation of defined tasks. Support NFA to provide technical assistance to verify the development of the plan and approach. Action partners NFA will : facilitate development of plan with actions

		provide technical assistance to verify the development of the plan and approach.
Milestone Year 2	Surveillance (2022): By the second surveillance audit, implement the plan and begin to assemble the information needed to assess as to the likelihood that FADS could disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. Expected score: 60	
Client Action Plan	Activities:	Annual Industry Consultation the defined approach be implemented.
	Expected outcome Year 2:	A progress report will be provided to the audit team at the second annual surveillance FAD Reports from SPC
	Responsible Party/ies:	Lead Action FIA will: Co-organise and participate in all meetings to monitor the implementation of defined tasks. Support NFA to provide technical assistance to verify the development of the plan and approach. Action partners NFA will : facilitate development of plan with actions provide technical assistance to verify the development of the plan and approach
Milestone Year 3	Surveillance (~~2023~~ 2025): By the third surveillance audit, continue to collect the information needed to assess the likelihood that FADS could disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. Expected score: 60	
Client Action Plan	Activities:	Annual Industry Consultation Continued implementation of the defined approach
	Expected outcome Year 3:	A progress report indicating preliminary findings will be provided to the audit team at the third annual surveillance audit. Meeting Minutes NFA FAD Reports

		FAD Reports from SPC
	Responsible Party/ies:	Lead Action FIA will: Co-organise and participate in all meetings to monitor the implementation of defined tasks. Support NFA to provide technical assistance to verify the development of the plan and approach. Action partners NFA will : facilitate development of plan with actions provide technical assistance to verify the development of the plan and approach
Milestone Year 4	Surveillance (2024): By the fourth surveillance audit, provide evidence that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm. Expected score: 80	
Client Action Plan	Activities:	Annual Industry Consultation A draft report will be presented to stakeholders for comment. The draft report will cover: (i) the potential impact of the UOA FADs on the behaviour, feeding and migration of key elements of the ecosystem; and (ii) any other main consequences of the UOA FADs for the ecosystem that may be inferred. Comments from stakeholders will be used to modify the draft report if needed.
	Expected outcome: Year 4	Final Report will be presented at the fourth annual surveillance audit. Meeting Minutes FAD Reports from SPC NFA FAD Reports
	Responsible Party/ies:	Lead Action FIA will: Co-organise and participate in all meetings to monitor the implementation of defined tasks. Support NFA to provide technical assistance to verify the development of the plan and approach.

		Action partners NFA will : facilitate development of plan with actions provide technical assistance to verify the development of the plan and approach
Consultation on condition	Letters of support from NFA in relation with action plan	
Progress on Condition (Year 1)	This condition has been closed due to updated rationale based on new information and interpretation of this PI related to serious or irreversible harm to the key elements of ecosystem structure and function. The re-scored rationale can be found in section 3.2 Rescoring Performance Indicators.	
Status	Closed Year 1 Surveillance	
Additional information		

3.3.9 Condition 2-7 PI 2.3.2 SI c (Silky Sharks)

Performance Indicator	PI 2.3.2 (c) Management strategy evaluation (Silky Shark)
Score	PI score: 65
Justification	The information presented in PI 2.3.2 SI(c) indicates that, for Silky Sharks, there is currently a lack of objective evidence to support the assertion that the management strategy for this species is working. Based on information directly about Silky Sharks in tropical tuna purse seine fisheries and the impact of the purse seine fisheries on Silky Sharks, the assessment team concludes that there is currently no objective basis for confidence that the management strategy for this species will work. Specifically, the following issues are emphasised: ▪ The lack of evaluation from WCPFC regarding the effectiveness of a no-retention policy, especially given the low survivability of the species upon encounters with the fishery, does not provide an 'objective of basis of confidence' that the strategy in place for Silky Sharks will work. ▪ The large volumes of Silky Shark encounters suggest that adopting WCPFC recommended safe-handling procedures alone may be ineffective or impractical as a means of providing an objective basis for confidence that the strategy in place will work.
Condition	By the first year surveillance audit at reassessment audit following recertification provide evidence of an objective basis for confidence that the strategy for Silky Sharks will work, based on information directly about the UoA and/or the species [silky shark] involved.
Milestone Surveillance Year 2	Surveillance: Milestone Year 2 By the second surveillance audit: ✓ *provide an evaluation of the effectiveness of the retention ban on Silky Sharks as a means to provide confidence that the management strategy for this species will work.* ✓ *provide an evaluation of the effectiveness and/or feasibility of the adoption of safe-handling and release techniques on Silky Sharks as a means to provide confidence that the management strategy for this species will work.* Expected score: 75
Client Action Plan	**Activities:** The client, in coordination with PNG National Fisheries Authority, SPC, ISSF and individual experts, will develop a PNG FIA ETP Work plan that defines a robust approach to estimate total annual ETP fishing mortality in the PNG FIA MSC fishery, including for silky sharks, based on analyses of observer program data and literature review of relevant studies to estimate: 1. Total silky sharks that are released from the purse seine; 2. Mortality rate of silky sharks that are released from the purse seine; 3. Total silky shark catch (i.e., sharks that are brailed onboard, and not released from the net), 4. The incidental retention of silky sharks (e.g., small sharks may occasionally not be detected by crew and are accidentally retained in wells); 5. The silky shark release mortality rate (the proportion of silky sharks that are dead upon being released by crew); 6. Post-release mortality rate of silky sharks that are captured and released alive from the vessel; and 7. Total silky shark mortalities from entanglement in drifting FADs tracked and set on by PNG FIA vessels, including in-use and abandoned and lost drifting FADs.

	The final component will account for current drifting FAD designs that are set on and tracked by UoA vessels, as well as the transition by the WCPO regional purse seine fishery to non-entangling drifting FADs by 1 January 2024 under WCPFC CMM 2021-01. The clients' work plan will also define activities that assess compliance with the WCPFC silky and oceanic whitetip shark retention bans and describe current practices by PNG FIA fishers for handling and releasing silky and oceanic whitetip sharks and determine where there is deviation from the WCPFC's Best handling practices for the safe release of sharks (WCPFC suppl CMM 2019-04). Furthermore, the work plan will include activities to evaluate the potential for PNG FIA MSC vessels to all use a hopper and release ramps to sort sharks from the catch and facilitate their release on the upper deck. Hoppers would need to have a wide enough surface area to enable identification of all catch brailed aboard, and must include a door or other device that prevents bycatch from being moved too quickly to the lower deck before it can be detected and released. The work plan will also include an activity to evaluate existing evidence on the potential effect on silky shark post-release mortality rates of using a bycatch release conveyor belt on the lower deck.	
	Expected Outcome: (1) Robust estimate of total annual silky shark fishing mortality in the PNG FIA MSC fishery, including an evaluation of current handling and release practices, providing a basis for assessing the efficacy of the WCPFC silky shark retention ban. (2) Identify opportunities to modify handling and release equipment and practices to reduce at-vessel and post-release mortality rates.	
Milestone Surveillance Year 3	Surveillance: Milestone Year 3 ~~By the third surveillance audit, provide an evaluation of alternative methods to reduce capture of Silky Sharks that could be implemented at the UoA level~~. *[Background: the condition is placed because the management strategies in place for silky shark (safe handling and release, use of non-entangling FADs) may not be expected to work because they do little to prevent silky sharks from being captured and brought on board, at which point their mortality rate is quite high. The client group has begun evaluations of alternate strategies for reducing catch of silky sharks ("warmspot" analysis), improving outcome by using hoppers (not feasible due to deck space limitations), and has conducted an analysis of estimated annual mortality associated with the fleet.]* ***Updated Milestone**: By the third surveillance audit, implement measures to fishing practices based on the findings from the first year's evaluation that minimize mortality of silky sharks (reduce accidental capture of Silky Sharks or increase their survival rates after release).* *Begin a detailed analysis of the impact of these measures on silky sharks' survival rates This assessment should include an evaluation of fishing operation factors relevant to the UoA that influence post-release mortality, including an assessment of the crew's knowledge of safe release guidelines and monitoring of implementation of safe release guidelines by the crew.* Expected score: 75	
Client Action Plan	**Activities:**	Assessment to determine whether the annual silky shark mortality level by the UoA, estimated by accounting for the WCPFC retention ban, and potential improvements in handling and release practices and equipment by the UoA, is "working" in that the UoA is not preventing rebuilding of the WCPO silky shark stock, while also accounting for the cumulative impacts of MSC fisheries. Furthermore, the client will develop outreach material and will convene workshops to increase UoA fishers' awareness

		and capacity to implement WCPFC's prescribed best practice handling and release methods for silky sharks.
	Expected outcome:	Silky shark management strategy evaluation completed, and whether the estimated silky shark mortality level in the PNG FIA MSC fishery is preventing rebuilding of the WCPO silky shark stock. Outreach activities on prescribed handling and release practices.
Milestone Surveillance Year 4	Surveillance: Milestone Year 4 ~~By the fourth surveillance audit, provide an evaluation of the feasibility of the UoA to implement these alternative methods.~~ *Provide a detailed analysis of the impact of the implemented measures on Silky Sharks' survival rates. This assessment should include an evaluation of fishing operation factors relevant to the UoA that influence post-release mortality, including an assessment of the crew's knowledge of safe release guidelines and monitoring of implementation of safe release guidelines by the crew.* Expected score: 75	
Client Action Plan	**Activities:**	Conduct research, analyzing observer program data, to determine the potential for area-based management tools to enable UoA tuna purse seine vessels to avoid temporally and spatially predictable static hotspots of silky shark (and other species-specific ETP catch) bycatch rates, and bycatch ratio of silky shark catch (and other species-specific ETP catch)-to-tuna catch. E.g., are silky shark catch rates higher near shallow submerged features (seamounts, banks, reefs), islands and atolls relative to open ocean fishing grounds, or are there certain seasons or moon phases or time-of-day of setting with higher silky shark catch rates. The assessment will include all ETP species to enable identifying potential multispecies conflicts from implementing alternative ABMT strategies so that these conflicts can be accounted for so that any trade-offs are acceptable. The client will decide whether to employ area-based management measures, require use of hoppers, upper deck release ramps, and lower deck release conveyor belts.
	Expected outcome:	Report documenting the methods, results and discussion on the potential for static ABMTs to reduce silky shark catch rates and levels in the MSC PNG FIA fishery. Decision on whether to employ AMBTs and additional equipment that may reduce silky shark release and post-release mortality rates.
Milestone Year 1 -Re-assessment Surveillance	Surveillance: Milestone Year 1 following recertification By the first-year surveillance audit at reassessment audit following recertification, based on previous evaluations, provide evidence to demonstrate that all UoA vessels are implementing methods which support the provision objective basis for confidence that the management strategy for Silky Sharks will work. Expected score: 80	
Client Action Plan	**Activities:** Provide objective evidence that the silky shark management strategy "will work" – meaning that silky shark estimated mortalities from the PNG FIA MSC fishery do not prevent	

	rebuilding and recovery of the WCPO stock, based on information on estimates of total silky shark fishing mortality from the PNG FIA fishery and the stock level impacts.
	Expected outcome: Client report to the CAB summarizing evidence that the silky shark management strategy will work.
Consultation on condition	NFA, SPC, ISSF
Progress on Condition (Year 2)	The client group compiled a progress report for this condition that evaluated the number of silky sharks encountered in the PNG FIA fleet from 2019 through 2022 and made inferences about the impacts of the fleet on this species based on catch and published post-release mortality rate. No silky sharks were retained by PNG FIA vessels in either of the most recent years available (2021 and 2022), indicating compliance with the retention ban, however observer coverage was not 100% during these years affected by COVID-19. The progress report also compiled fate and catch data to estimate annual mortality in the UoC and as a fraction of the stock-wide recent annual catch. These actions in part provide an evaluation of the effectiveness of the retention ban on Silky Sharks as a means to provide confidence that the management strategy for this species will work, fulfilling the first part of the second surveillance milestone. PNG FIA also conducted an informal evaluation of employing hoppers to separate silky sharks (and other ETP species) from the catch to increase survival so that the sharks do not go below deck. They found that this piece of equipment is not feasible due to the vessels in the fleet being too small to effectively employ them. They have implemented skipper training for ISSF and WCPFC best handling practices for sharks and other ETP species as well as displayed posters highlighting these guidelines on the vessels, and there is some evidence of stretchers being used to handle silky sharks and decrease the amount of time they are out of the water. However, degree of implementation of best handling practices is unknown. The fleet also provided evidence of deploying only non-entangling FADs in recent years, a further piece of the strategy to reduce mortality for this species. Finally, the client group initiated exploratory research evaluating the potential for area-based management tools to reduce silky shark catch rates by attempting to separate silky shark and tuna catch rate "hotspots." This preliminary analysis found that "shifting effort away from core fishing grounds in the Bismark Sea and from the Solomon Sea within the PNG EEZ (1) northwards up to but south of the equator in the PNG EEZ, (2) eastwards around the equator in the Nauru EEZ and Kiribati EEZ around the Gilbert Islands and (3) into a marginal area of the fishing grounds around 100N in the western zone of the FSM EEZ would reduce overlap with catch rate hotspots for silky sharks, rays and whale sharks, and would increase catch rates of principal market tunas" (Gilman pers. comm.). While this exploratory research is promising, it showed limitations for ETP species (not enough data for some) and has not to date included an investigation into the economic impacts (fuel, etc.) of shifting the fishing grounds to avoid areas of high silky shark catch. An implementation progress report provided by the client, using the observer data for the vessels in the UoC from 2019-2022, concludes "Thus, the rough estimate of total silky shark annual mortality magnitude in the FIA fishery is 7,492.2 silky sharks (6,374 from dead discards and retention, 1,055 from post-release mortality [estimating a 48% post-release mortality rate] and 0.2 from entanglement in entangling design dFAD appendages). With an annual mean of 9,527 silky sharks captured by the FIA fishery, about 79% of captured silky sharks do not survive the interaction." The progress report concludes is equivalent to 0.9% of the total WCPO silky shark stock catch. The team agrees that the estimated mortality estimates of silky sharks provide evidence that the direct effects of the UoA are highly likely to not hinder recovery of silky sharks, as evaluated under Outcome PI 2.3.1. However, this condition is raised against the

	Management Strategy PI 2.3.2c, on the lack of objective bases for confidence that the strategy in place will work to minimise mortality. The assessment team also notes that the post-release mortality rate cited in the progress report of 48% from Poisson et al. 2014, is based on data from a purse seine fleet operating in the Indian Ocean were all vessels used a metal hopper, where sharks were sorted from tuna. However, other studies conclude higher post-release mortality rates, Hutchinson et al. 2015 reports 83.3% post release mortality of juvenile silky sharks in the first brail, and 93.3% mortality in posterior brails in the WCPO, Eddy et al. 2016 reports 62% post-release mortality after brailing in the EPO. Post-release mortality of silky sharks is influenced by the variety of purse seine vessels and fishing operations, including the time elapsed from the catch to release, shark biological characteristics (e.g. size, age), the experience gained by the crew on the application of best releasing practices, and the adaptation of the deck to facilitate release (release conveyor belt, hoppers, etc.) (Onandia et al., 2021). More time is necessary to evaluate the effectiveness and degree of adoption of safe-handling and release techniques on silky sharks in the UoC and whether the management strategy will work to minimise mortality of silky sharks , but the client group has made efforts to explore different management strategies and quantify the UoC's impact on this species. We consider the first part of the milestone and partial second part of the milestone are met. To ensure the client is on track to meet the condition timeline, future milestones were adjusted.
Status	On Target

3.3.10 Condition 2-8 PI 2.3.2 - Sea Turtles, Mobulids and Sharks

Performance Indicator	PI 2.3.2 (d) Management strategy evaluation PI 2.3.2 (d) Management strategy implementation
Score	PI score: 65
Justification	**Silky Sharks and Oceanic Whitetip Sharks (SG60)** The assessment team identified an unspecified number (0.5 MT) of Silky Sharks (fate code RWW) that were reportedly retained by the UoA throughout the entire period for which observer data was provided (2015-2021). The retention of Silky Sharks is prohibited (CMM 2019-04), and evidence of Silky Shark retentions suggests that this measure is not being implemented successfully. The WCPFC requires that when sharks are unwanted bycatch, they should be released alive using techniques that result in minimal harm set out in CMM 2019-04. While the guidelines provided by the WCPFC for such release techniques are only recommendations, this is a standing requirement, yet we have not seen evidence that skippers implement release techniques that result in minimal harm. This is particularly relevant for species with high mortality rates indicated by observer reports (upon release, observers reported 26% and 33% survival of Silky and Oceanic Whitetip Sharks, respectively). The future requirement of non-entangling FADs under CMM 2021-01 can be considered to support the strategy for those ETP species that are impacted. It is unclear how the UoA flag states intend to fully implement the CMM when it becomes effective in January 2024. Given the lack of evidence of implementation of the measures noted above, we consider **requirements for SG80 not met.** **Mobulids and Marine Turtles (SG60)** While the WCPFC has adopted guidelines for the required safe release and handling of Mobulids (CMM 2019-05 Annex 1), and marine turtles (CMM 2018-04) the assessment team did not receive evidence that vessels in the UoA consistently follow such guidelines to '[…] promptly release alive and unharmed, to the extent practicable, mobulid rays as soon as possible, and to do so in a manner that will result in the least possible harm to the individuals captured.' There is evidence that some measures for Mobulids outlined in CMM 2019-05 are being implemented successfully. Data from the observer program provides evidence that vessels in the UoA are not retaining Mobulid rays and marine turtles. However, the critical component in CMM 2019-05 is for fishing vessels to follow safe release guidelines. While the use of the WCPFC best handling practices are recommendations, safe release and handling of Mobulids and marine turtles is a requirement, thus some evidence that adequate handling practices consistently being applied is needed to confirm that the strategy is being implemented successfully. **The SG80 is not met.**
Condition	By the first year surveillance audit at reassessment audit following recertification provide evidence that: SI c. Objective basis for confidence that the partial strategy/ strategy will work, based on information directly about the UoA and/or the species involved. Sid. The measures/strategies for sea turtles, mobulids and shark species are being implemented successfully.
Milestone Surveillance Year 2	Surveillance: Milestone Year 2 By the first surveillance audit, the fishery should identify the factors inhibiting the successful implementation of measures/strategies for ETP species (sea turtles, mobulids and sharks) and develop a plan to demonstrate their effective implementation. Specifically:

	✓ *retention of ETP shark species* ✓ *lack of consistent and well-documented safe-release and handling protocols for ETP species* ✓ *Provisions of the PNG FAD Management Policy* Expected score: 75
Client Action Plan	**Activities:** Analyze observer program data for the previous 5 years to: (1) document the annual number and/or weight of any retained ETP species, including turtles, rays and silky and oceanic whitetip sharks, by PNG FIA vessels, and (2) document handling and release practices employed for ETP species, including turtles, rays and epipelagic sharks, and determine if they met WCPFC prescribed practices. Analyze observer program data annual starting in 2024 to assess UoA vessel compliance with the WCPFC requirement to use only non-entangling drifting FADs starting 1 Jan. 2024. If any prohibited species were retained, analyze available observer data records to determine if this was a result of intentional retention or otherwise unintentional such as when small sharks are not detected by crew and are accidentally retained in wells. If observer data lack adequate information to make this determination, then interview skippers to determine the cause of any documented retention of prohibited species. Prepare an ETP work plan with activities and time bound milestones to address any identified deficits, such as retention of prohibited species, non-compliance with WCPFC recommended handling and release methods, and non-compliance with WCPFC required use of non-entangling drifting FADs. Furthermore, the work plan will include activities to evaluate the potential for PNG FIA MSC vessels to all use a hopper and release ramps to sort sharks from the catch and facilitate their release on the upper deck – described in the CAP for condition 2-7. Develop outreach materials and convene workshops to increase UoA fishers' awareness and capacity to implement WCPFC's prescribed best practice handling and release methods for ETP species.
	Expected • **outcome:** Identification of causes of any non-compliance with ETP species-specific retention bans, drifting FAD designs and handling and release practices. • Actions defined to address any identified non-compliance with ETP species-specific retention bans. • Actions defined to address any identified non-compliance with required use of non-entangling drifting FADs. • Identification of opportunities to modify handling and release equipment and practices to reduce at-vessel and post-release mortality rates of ETP species.
Milestone Surveillance Year 3	Surveillance: Milestone Year 3 By the second surveillance audit~~,~~ *provide evidence that:* ~~and develop a plan for testing options intended to improve implementation of management measures/strategies for ETP species within the fishery. Specifically:~~ ✓ ~~ensuring that~~ *UoA vessels continue to comply with requirements prohibiting* ETP shark species *retention.* ~~are not retained~~ ✓ ~~operationalizing safe handling and release protocols for ETP species~~ *Conduct a thorough review of the crew's practices to assess their knowledge and adherence to regulations and safe release guidelines, identifying areas for improvement. (Please note self-reported compliance by crew members without any additional verification is not considered sufficient evidence of successful implementation).*

	✓ *Implement regular checks and audits to ensure ongoing compliance and provide feedback and additional training as needed to address any shortcomings.* ✓ *UoA continues* complying with provisions of the PNG FAD Management Policy *and provides evidence of use of non-entangling FADs only after 1 January 2024 in compliance with CMM 2021-01.* Expected score: 75	
Client Action Plan	**Activities:**	Begin implementation of the ETP work plan developed in year 1 and analyse observer program data annually to assess performance in compliance with retention bans, drifting FAD designs and handling and release practices.
	Expected outcome:	Results of annual performance assessment of the ETP work plan.
Milestone Surveillance Year 4	Surveillance: Milestone Year 4 By the third surveillance audit, provide evidence that ~~one or more options have been tested and proven effective in improving the implementation of measures/strategies for each of the following:~~ ✓ ~~ensuring that~~ *UoA vessels continue to comply with requirements prohibiting* ETP shark species *retention.* ~~are not retained~~ ✓ ~~operationalizing safe handling and release protocols for ETP species~~ *Improvements implemented as a result of the review conducted on Year 3 of the crew's practices to assess their knowledge and adherence to regulations and safe release guidelines.* ✓ *Implementation of regular checks and audits to ensure ongoing compliance and provide feedback and additional training as needed to address any shortcomings.* ~~✓ operationalize safe handling and release protocols for ETP species~~ ✓ *comply with provisions of the PNG FAD Management Policy* Expected score: 75	
Client Action Plan	**Activities:**	Continue implementation of the ETP work plan and continue to analyse observer program data annually to assess performance in compliance with retention bans, drifting FAD designs and handling and release practices.
	Expected outcome:	Results of annual performance assessment of the ETP work plan.
Milestone Surveillance Year 1 following re-certification	Surveillance: Milestone Year 1 following recertification By the first year surveillance audit at reassessment audit following recertification, provide evidence that the measures/strategies for ETP species are being implemented successfully for the whole fishery. Expected score: 80	
Client Action Plan	**Activities:** Same as Year 4 CAP	
	Outcomes: Same as Year 4 CAP	
Consultation on condition	Letter of support from flag state attached, NFA, SPC, ISSF	
Progress on Condition (Year 2)	The assessment team found evidence of consistent and well-documented safe handling and release protocols for ETP species. FIA has produced videos of handling and release practices for ETP species and has posted the videos on the FIA PNG website. This also included documented trainings of managers, skippers, and crew and the presence of ISSF skipper	

	handbooks and other safe handling materials on board. Four training sessions were documented and occurred between November 2022 and January 2023, with attendance by industry managers from fishing companies, PNG FIA staff, and skippers and crew from UoC vessels. The client provided attendance lists and screenshots from online trainings, one of which also included a presentation from Laurianne Escalle at the SPC. However, the team did not find evidence of consistent implementation of safe handling practices for sharks and mobulids based on a small sample of crew and observer interviews. We recognize that the efforts to provide training and implement these practices are new, and therefore it may take some time to see consistent implementation. Vessels did have pamphlets and posters documenting safe handling practices visible on board. The client compiled fate data for all captured turtles and most rays for the period 2019 to 2022. There is a demonstrated lack of retention of ETP sharks and mobulids since 2019 based on observer and logbook catch data through 2022. Additional findings include the fleet's use of non-entangling FADs and efforts to participate in biodegradable FAD and FAD tracking studies. Self-reported FAD use (number deployed and type) by fishing company was also included in the client documentation, though self-reporting alone is not sufficient evidence of implementation. This information indicates mixed materials (biodegradable and non-biodegradable) are used and there are still some entangling-type FADs in use by at least one fishing company. Finally, FIA has identified improving the capacity of observer species identification skills and species-level data recording (particularly for mobulids) as a priority. To ensure the client is on track to meet the condition timeline, future milestones were adjusted.
Status	On target

3.3.11 Condition 3-1 (PI 3.1.2) PNG

Performance Indicator	3.1.2 the management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organizations and individuals who are involved in the management process are clear and understood by all relevant parties.	
Score	75	
Justification	See rationale for PI 3.1.2 b:	
Condition	By the fourth surveillance audit first surveillance at re-assessment audit following recertification, provide evidence to demonstrate that clear and transparent processes exist at the national management level to regularly seek and accept "relevant information" provided via consultative processes and that any such information is considered in management decision making at national and regional levels.	
Milestone Year 1 **(Covid Derogation)**	By the first surveillance audit work with NFA to develop a basic proposal/plan for improvement of the consultation processes, to ensure the condition is closed by the 4th year of certification. The Plan should identify: consultation mechanisms, which sources/parties will be involved in the consultation processes and the frequency with which the consultation processes will seek and accept information. meet with NFA to discuss the development of a basic proposal/plan for improvement of the consultation processes, to ensure the condition is closed by the first surveillance audit following recertification. Expected score: 75	
Client Action Plan	Activities:	FIA will make NFA aware of the need to develop a structured plan/protocol to support the regular annual NFA/Industry consultative processes. This is to be built into NFA's annual work programme and managed by an officer as part of its annual activity plan. A designated NFA contact to work with FIA to develop specific dates and agenda items for these consultative processes, including minuting discussions and outcomes and further documenting reasons for not accepting any views and opinions of a range of stakeholders NFA and FIA to convene one national consultation to review and discuss various work programmes and activities which pertains to MSC work and other issues of interest at national, sub-regional and regional level.
Milestone Year 2	By the second surveillance audit work with NFA to develop a basic proposal/plan for improvement of the consultation processes, to ensure the condition is closed by the 4th year of certification. The Plan should identify consultation mechanisms, which sources/parties will be involved in the consultation processes and the frequency with which the consultation processes will seek and accept information. Expected score: 75	
Client Action Plan	Activities:	FIA to work with NFA to review and develop a structured plan/protocol as a formalized and documented process to support the regular annual NFA/Industry consultative processes. This is to be built into NFA's annual work programme and managed by an officer as part of its annual activity plan. A designated NFA contact to work with FIA to develop specific dates and agenda items for these consultative processes, including minuting discussions

		and outcomes and further documenting reasons for not accepting any views and opinions of a range of stakeholders Improvement in prescribing process for multi-stakeholder efforts in technical consultative committee setup and their full participation in regard to preparing and reviewing fishery management plans Improvement in prescribing process for multi-stakeholder efforts in technical consultative committee setup and their full participation in regard to input of views and opinions on sub-regional and regional agendas in the annual PNA, FFA and WCPFC meetings. This includes facilitating their involvement as required. Undertake improvement in prescribing process for multi-stakeholder efforts in the tuna technical advisory consultative committee setup and their full participation in regard to any program or activity that aims to improve the management and development of the tuna fisheries Interested and affected parties would be identified and invited to participate at these meetings. These will involve line Government agencies, stakeholders, NGOs and representatives at the provincial and district government level. NFA and FIA to convene one national consultation in 2020 to review and discuss various work programmes and activities which pertains to MSC work and other issues of interest at national, sub-regional and regional level. FIA to improve its formal and informal processes to hold consultations with its members and other stakeholders to consider their needs with the objective of gaining a consensus and collective position on required approach. Improve FIA plan/protocol to refine the prescription on convening the formal 4 regular internal meetings and special meetings, to discuss its positions prior to national consultations and board meetings.
	Expected outcome:	Protocol of multi-stakeholder consultation process drafted Record of Minutes/attendees and Outcomes
	Responsible Party/ies:	Lead Action FIA will: Support NFA in drafting of the consultative protocols by Board Support NFA in coordinating the 2020 NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input is taken into account rendered. Draft and adopt FIA's consultative protocol Oversee the coordination of the national consultation on workprogram and activities pertaining to MSC work Action partner NFA will: oversee and coordinate the drafting of the consultative protocols

		oversee and facilitate the 2020 NFA/industry annual consultation oversee and coordinate the participation of multi-stakeholder protocol oversee and coordinate the participation of multi-stakeholder in country position consultation on sub-regional and regional agendas ie annual PNA, FFA and WCPFC meetings. This includes facilitating their involvement as required Assist and coordinate the national consultation on work program and activities pertaining to MSC work
Milestone Year 3	By the third surveillance audit demonstrate initial steps to implement proposed improvements to the consultative processes and ensure inclusion of a range sources/parties identified in the proposal/plan for improvements developed during the first-year audit are occurring. Expected score: 75	
Client Action Plan	Activities:	Review National Tuna Development & Management Plan (NTDMP) and if required have alignment mechanism (schedule) to have consultative protocol incorporated or referenced. An annual consultation meeting successfully convened in 2020 and attended by line industry representatives, government agencies, provincial and district government, NGOs, stakeholders. Key issues were discussed with outcomes and resolutions pertaining to national, sub-regional and regional context and meetings discussion and outcomes recorded and circulated. Indicative dates were also identified for convening of consultative meetings in 2021 and 2022. A number of consultative meetings held between FIA & NFA, NGO & Other Government Agencies to consolidate PNG positions to PNA, FFA, SC, TCC and WCPFC meetings, etc
	Expected outcome:	Consultative protocol adopted and implemented Record of Minutes/Attendees, how information obtained from consultative process was considered and outcomes, circulated & available on public access PNA, FFA, and WCPFC meetings reports participation of PNG stakeholders
	Responsible Party/ies:	Lead Action FIA will: Support NFA in completion and adoption of the consultative protocols Support NFA in coordinating the NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input is rendered. adopt and implement FIA's consultative protocol Oversee the coordination of the national consultation on work program and activities pertaining to MSC work Action partner

		NFA will: oversee and coordinate the approval and adoption of the consultative protocols oversee and facilitate the NFA/industry annual consultation oversee and coordinate the participation of multi-stakeholder protocol oversee and coordinate the participation of multi-stakeholder in country position consultation on sub-regional and regional agendas ie annual PNA, FFA and WCPFC meetings. This includes facilitating their involvement as required Assist and coordinate the national consultation on work program and activities pertaining to MSC work
Milestone Year 4	By the fourth surveillance audit: demonstrate the implementation of consultation processes from a range of sources and that this information is being considered by the management system at both the national and regional levels Expected score: 75	
Client Action Plan	Activities:	Minutes of NFA/industry meetings held with the NFA, FIA and other stakeholders where the agenda includes consideration of the stakeholder consultation process. Review National Tuna Development & Management Plan (NTDMP) and if required have alignment mechanism (schedule) to have consultative protocol incorporated or referenced Minutes of all meetings outcomes document input of stakeholders contribute to the preparation outcome of management decision PNA, FFA, and WCPFC meetings reports participation of PNG stakeholders and outcomes on NFA website Key issues discussed with outcomes and resolutions pertaining to national, sub-regional and regional context effectively form part of policy and legislative reviews and implemented by the FIA members.
	Expected outcome:	Record of Minutes/Attendees and Outcomes, updates of protocols for convening of these meetings.
	Responsible Party/ies:	Lead Action FIA will: Support NFA in the review and incorporation of consultative protocol in National Tuna Management and Development Plan. Support NFA in coordinating the NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input is rendered. adopt and implement FIA's consultative protocol

		Oversee the coordination of the national consultation on work program and activities pertaining to MSC work convene formal 4 regular internal meetings and special meetings, to discuss its positions prior to national consultations and board meetings. Action partners NFA will : oversee and coordinate the review and incorporation of consultative protocol in National Tuna Management and Development Plan. oversee and facilitate the NFA/industry annual consultation oversee and coordinate the participation of multi-stakeholder protocol oversee and coordinate the participation of multi-stakeholder in country position consultation on sub-regional and regional agendas ie annual PNA, FFA and WCPFC meetings. This includes facilitating their involvement as required Assist and coordinate the national consultation on work program and activities pertaining to MSC work
Milestone Year 1 at Re-assessment	By the first surveillance audit following recertification, be able to demonstrate ongoing consultation through implementation of consultation processes from a range of stakeholders and that this information is being considered by the management system at both the national and regional levels. Expected score: 80	
Client Action Plan	Activities:	An annual consultation meeting successfully convened in 2023 and continued to be actively attended by line industry representatives, government agencies, provincial and district government, NGOs, stakeholders. The consultative processes form part of NFA's ongoing annual work programme and budget, with key result area being able to be successfully measured by NFA Minutes of NFA/industry meetings held with the NFA, FIA and other stakeholders where the agenda includes consideration of the stakeholder consultation process and be available to public. Minutes of all meetings outcomes document input of stakeholders contribute to the preparation and outcome of management decision and minutes referenced PNA, FFA, and WCPFC meetings reports participation of PNG stakeholders
	Expected outcome:	Record of Minutes/Attendees and Outcomes is available for public access. updates of protocols for convening of these meetings.
	Responsible Party/ies:	Lead Action

		FIA will: Support NFA in the implementation of consultative protocol in National Tuna Management and Development Plan Support NFA in coordinating the NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input taken into account. adopt and implement FIA's consultative protocol Oversee the coordination of the national consultation on work program and activities pertaining to MSC work convene the formal 4 regular internal meetings and special meetings, to discuss its positions prior to national consultations and board meetings. Action partners NFA will: oversee the implementation of consultative protocol in National Tuna Management and Development Plan oversee and facilitate the NFA/industry annual consultation oversee and coordinate the participation of multi-stakeholder protocol oversee and coordinate the participation of multi-stakeholder in country position consultation on sub-regional and regional agendas ie annual PNA, FFA and WCPFC meetings. This includes facilitating their involvement as required assist and coordinate the national consultation on work program and activities pertaining to MSC work
Consultation on condition	Letter of support from NFA in relation with action plan	
Progress on Condition (Year 1)	FIA provided written evidence of meeting and communicating with NFA to discuss actions needed to meet future surveillance milestones and close P3 conditions by the first surveillance audit following recertification.	
Progress on Condition (Year 2)	PNG- FIA provided evidence of consultations with the National Fisheries Authority and evidence of general support from the NFA for a proposal from PNG FIA to improve stakeholder involvement in decision making in the context of the in National Tuna Management and Development Plan. The proposal identified basic consultation mechanisms, which sources/parties will be involved in the consultation processes and the frequency with which the consultation processes will seek and accept information.	
Status	On target	

3.3.12 Condition 3-2 (PI 3.2.1) PNG

Performance Indicator	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	75	
Justification	See rationale for PI 3.2.1: Evaluation Table for PI 3.2.1 – Fishery-specific objectives	
Condition	By the first surveillance audit following recertification, the client shall present evidence that short 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	
Milestone Year 1	By the first surveillance audit meet with NFA to discuss the development of a basic proposal/plan for improvement of the consultation processes, to ensure the condition is closed by the first surveillance audit following recertification. Expected score: 75	
Travis **Client Action Plan**	Activities:	FIA will make NFA aware of the need to develop short term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, and are explicit within the fishery-specific management system s NFA and FIA to convene one national consultation to review and discuss various work programmes and activities which pertains to MSC work and other issues of interest at national, sub-regional and regional level.
Milestone Year 2	By the second surveillance audit work with NFA to prepare a basic proposal/plan for the development of short-term objectives, to ensure the condition is closed by the first surveillance audit following recertification. The process should identify: fisheries management objectives consistent with the Fisheries Management Act 1998 aimed at achieving outcomes expressed by MSC's Principle 1 and 2 and the stakeholders who should be consulted. Expected score: 75	
Client Action Plan	Activities:	prepare a basic proposal/plan for the review of objectives draft list of potential short- and long-term objectives consistent with the Fisheries Management Act 1998 and the MSC Principles 1 and 2 including process of consultation seek technical support from SPC or FFA for input on the development of objectives conduct consultation for review by stakeholders review the National Tuna Fishery Management and Development Plan 2014 through a series of consultations with relevant stakeholders – FIA, NFA, NGOs and relevant government agencies.
	Expected outcome:	Draft proposal/plan Outcomes of the meeting, including Attendees and minutes, reports

		Well-articulated short-term objectives expressed under MSC's P1 & P2 form part of the NTFMDP section 11
	Responsible Party/ies:	Lead Action FIA will: Support NFA in the draft the proposal/plan Support NFA in coordinating the NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input is rendered. Action partner NFA will: oversee the coordination of draft the proposal/plan oversee and facilitate the NFA/industry consultation on this condition.
Milestone Year 3	By the third surveillance audit demonstrate initial steps to identify and test the short-term objectives with a range sources/parties identified in the proposal/plan who would need to be consulted on the new objectives. Expected score: 75	
Client Action Plan	Activities:	Undertake number of meetings with between NFA and NGOs and relevant government agencies on the planned approach and potential objectives. ensure that issues raised through the process to undergoes a wide consideration of the options to respond to the condition.
	Expected outcome:	list of the meetings with details on the discussions/decisions made, as supported by signed minutes.
	Responsible Party/ies:	Lead Action FIA will: Support NFA facilitating the implementation of the plan and approach to meeting the condition Support NFA in coordinating the NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input is considered. Action partner NFA will:

		oversee the development of objectives/update of the plan and approach to meeting the condition oversee and facilitate the NFA/stakeholders' consultation on this condition. oversee and coordinate the participation of multi-stakeholder on this condition
Milestone Year 4	By the fourth surveillance audit with NFA integrate the short-term objectives identified in the management system. Expected score: 75	
Client Action Plan	Activities:	Integration of short-term objectives into management systems including National Tuna Management and Development Plan
	Expected outcome:	Meeting Minutes includes final decisions on proposed new objectives Revised NTMDP incorporating proposed new objectives
	Responsible Party/ies:	Lead Action FIA will: Support NFA facilitating the implementation of the plan and approach to meeting the condition Support NFA in coordinating the NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input is rendered. Action partner NFA will: oversee the revision of the plan and approach to meeting the condition oversee and facilitate the NFA/industry consultation on this condition. oversee and coordinate the participation of multi-stakeholder on this condition
Milestone Year 5	By the first surveillance audit following recertification be able to demonstrate that the short-term objectives are explicit in the fishery-specific management system and are consistent with achieving the outcomes expressed in MSC's Principles 1 and 2. Expected score: 80	
Client Action Plan	Activities:	Integration of short-term objectives into management systems including National Tuna Management and Development Plan Revised Plan endorsed by the NFA Board and Minister and circulated and available to guide new private sector agreements on the objectives

	Expected outcome:	Integration of short-term objectives into management systems including National Tuna Management and Development Plan revision endorsed by the NFA Board and the Minister and published on NFA website Meeting Minutes, Plan approved by NFA Board and the Minister and Gazetted.
	Responsible Party/ies:	Action Lead FIA will: Support NFA facilitating the implementation of integrating of short-term objectives into management systems including National Tuna Management and Development Plan Support NFA in coordinating the NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input is rendered. Action partner NFA will: oversee the implementation of the integration of short-term objectives into management systems including National Tuna Management and Development Plan oversee and facilitate the NFA/stakeholders' consultation and awareness on this condition. oversee and coordinate the participation of multi-stakeholder on this condition Seek NFA Board and Ministerial approval and arrange for Gazettal.
Consultation on condition	Letters of support from NFA in relation with action plan	
Progress on Condition (Year 1)	FIA provided written evidence of meeting and communicating with NFA to discuss actions needed to meet future surveillance milestones and close P3 conditions by the first surveillance audit following recertification.	
Progress on Condition (Year 2)	The milestone for the year 2 surveillance audit states: By the second surveillance audit work with NFA to prepare a basic **proposal/plan** for the **development of short-term objectives**, to ensure the condition is closed by the first surveillance audit following recertification. The process should identify **fisheries management objectives consistent with the Fisheries Management Act 1998 aimed at achieving outcomes expressed by MSC's Principle 1 and 2** and the stakeholders who should be consulted (our emphasis added). The expectation was evidence of a document or series of meeting notes (or similar) identifying fisheries management objectives at achieving outcomes expressed by MSC's Principle 1 and 2. During the site visit neither NFA or FIA did not identify actions or ongoing discussion that constitute a plan or proposal for the development of short-term objectives. NFA did not confirm whether the National Tuna Management (2014) was under review. Such a review could constitute proposal or plan for the development of short-term objectives. It was indicated that the NPOA for Sharks 2021-2024 was under review with the assistance of the FFA, but no details were provided of the review. NFAs stated they have an effective legal	

	and institutional framework for the management of the UoA in place and that consultations FIA on the matter of short-term objectives were delayed until November 2023. A review by the auditors of other management actions taken by NFA since the last surveillance audit provided no evidence changes that would lead to a change in the scoring of this SI. In the absence of documentation constituting basic proposal/plan for the development of short-term objectives and based on discussion during the site visit, there is insufficient evidence to conclude that this year 2 surveillance milestone has been met
Status	Behind target

3.3.13 Condition 3-3 (PI 3.2.2) PNG

Performance Indicator	3.2.2 Management system decision making processes aimed at achieving objectives	
Score	70	
Justification	See rationale for PI 3.2.2 b, d	
Condition	SI b) By the first surveillance audit following recertification, provide evidence that decision-making processes as they relate to the EEZ and AWs respond to serious and other important issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions. SI d) By the first surveillance audit following recertification, provide evidence that Information on the fishery's performance and management action, at the national management level, 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.	
Milestone Year 1	By the first surveillance audit meet with NFA to discuss the development of a proposal to improve decision making processes such that they respond to important issues in a transparent, timely and adaptive manner and take account of the wider implications of decisions. Expected score: 75	
Travis **Client Action Plan**	Activities:	FIA will make NFA aware of the need to develop short term objectives, which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, and are explicit within the fishery-specific management system s NFA and FIA to convene one national consultation to review and discuss various work programmes and activities which pertains to MSC work and other issues of interest at national, sub-regional and regional level.
Milestone Year 2	By the second surveillance audit, work with NFA to develop a proposal to improve decision making processes such that they respond to important issues in a transparent, timely and adaptive manner and take account of the wider implications of decisions. Ensure the plan improves the flow of information on the fishery's performance and management actions. The plan should identify :who will assess fishery performance, how frequently this will occur, how this information will be transmitted and to whom and what actions will be taken to address deficiencies. Overall, the plan should identify ways to improve input from all sources and how best to assess the wider implications of decisions. Expected score: 75	
Client Action Plan	Activities:	Development of a proposal to improve decision making processes and information on fishery performance per the condition NFA/stakeholders' consultation on this condition FIA support NFA to set number of meetings with members to discuss implications and positions in context of short term and long objectives to consider the approach to meeting the condition

	Expected outcome:	Draft proposal circulated for comments consultation on the draft proposal held Meeting minutes
	Responsible Party/ies:	Action Lead FIA will: Support NFA in facilitating and coordinating the development of the proposal on improving the decision-making process and information on fishery performance Support NFA in coordinating the NFA/Industry/stakeholder consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry/stakeholder input is rendered. Action partner NFA will : Oversee and coordinate the development of the proposal on improving the decision-making process and information sharing oversee and facilitate the NFA/industry consultation and awareness on this condition. oversee and coordinate the participation of multi-stakeholder on this condition
Milestone Year 3	By the third surveillance audit, work with NFA to develop a proposal to improve decision making processes such that they respond to important issues in a transparent, timely and adaptive manner and take account of the wider implications of decisions. Ensure the plan improves the flow of information on the fishery's performance and management actions. The plan should identify who will assess fishery performance, how frequently this will occur, how this information will be transmitted and to whom and what actions will be taken to address deficiencies. Overall, the plan should identify ways to improve input from all sources and how best to assess the wider implications of decisions. Score 75 Expected score: 75	
Client Action Plan	Activities:	formalizing a decision-making framework which responds to important issues in a transparent, timely and adaptive manner and take account of the wider implications of decisions. Plan subjected to vetting and approval process by NFA Board Annual Industry/stakeholder Consultation Number of meetings with NFA
	Expected outcome:	Meeting minutes

		Plan to improve decision making processes and improve information on fishery performance vetted and approved.
	Responsible Party/ies:	Action Lead FIA will: Support NFA in facilitating and coordinating the approval of plan and incorporation into management frameworks Support NFA in coordinating the NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input is rendered. Action partners NFA will: Oversee and coordinate the approval of plan and incorporation into management frameworks oversee and facilitate the NFA/industry consultation and awareness on this condition. oversee and coordinate the participation of multi-stakeholder on this condition
Milestone Year 4	By the fourth surveillance audit, demonstrate initial steps to implement proposed improvements to the decision-making processes to ensure inclusion of the input from research, monitoring, evaluation and consultation, and initial steps for development of assessment processes and dissemination of fishery performance information. Expected Score 75	
Client Action Plan	Activities:	incorporation of revised decision-making guideline into management frameworks, including the National Tuna Management and Development Plan, if required. Regular Industry/Stakeholder Consultation Annual tuna management plan technical advisory committee meeting
	Expected outcome:	Meeting minutes Implementation of the revised decision-making processes framework which responds to important issues in a transparent, timely and adaptive manner and take account of the wider implications of decisions. Development of of assessment processes to disseminate fishery performance information.
	Responsible Party/ies:	Action Lead FIA will: Support NFA in facilitating and coordinating incorporation of revised decision-making guidelines into management frameworks, including

		the National Tuna Management and Development Plan, either as a stand-alone policy or built into the Plan Support NFA in coordinating the NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input is rendered. Action partner NFA will: Oversee and coordinate the incorporation of revised decision-making guidelines into management frameworks, including the National Tuna Management and Development Plan either as a stand-alone policy or built into the Plan Development of assessment processes to disseminate fishery performance information. oversee and facilitate the NFA/industry consultation and awareness on this condition. oversee and coordinate the participation of multi-stakeholders on this condition oversee the convening of annual tuna management plan technical advisory committee meeting on this condition.
Milestone Year 5	By the first surveillance following recertification be able to demonstrate decision- making processes are responding to serious and other important issues identified in relevant research, monitoring, evaluation, and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions. Also, provide evidence that information on the fishery's performance and management action are available on request and that explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity. Score 80 Expected score: 80	
Client Action Plan	Activities:	Annual tuna management plan technical advisory committee meeting draft workplan for NTMDP review in light to new information received (findings and relevant recommendations emerging from research, monitoring, evaluation and review activity) Finalise arrangements so that Information on the fishery's performance and management action is available on request and that explanations are provided for any actions or lack of action associated with findings. Annual Industry Consultation to update draft workplan for NTMDP review FIA to organize a number of meetings with industry to consult on draft workplan
	Expected outcome:	Meeting minutes

		Implementation of the revised decision-making processes made public and disseminated. Arrangements in place so that Information on the fishery's performance and management action is available on request and that explanations are provided for any actions or lack of action associated with findings. (Built into NTMDP or as part of an NFA policy). workplan for NTMDP review implemented
	Responsible Party/ies:	Action Lead FIA will: Support NFA in facilitating and coordinating the regular tuna management plan technical advisory committee meeting draft workplan for NTMDP review in light to new information received (findings and relevant recommendations emerging from research, monitoring, evaluation and review activity), as required. Support NFA in coordinating the regular NFA/Industry consultation Participate in all consultative meetings to assist and support NFA in ensuring the industry input is rendered. Action partners NFA will: Oversee and coordinate the regular tuna management plan technical advisory committee meeting draft workplan for NTMDP review in light to new information received (findings and relevant recommendations emerging from research, monitoring, evaluation and review activity) Implement arrangements so that Information on the fishery's performance and management action is available on request and that explanations are provided for any actions or lack of action associated with findings. (Built into NTMDP or as part of an NFA policy). Oversee implementation of NTMDP review. oversee and facilitate the NFA/industry consultation and awareness on this condition. oversee and coordinate the participation of multi-stakeholder on this condition oversee the convening of annual tuna management plan technical advisory committee meeting
Consultation on condition	Letters of support from NFA in relation with action plan and revision of key policies/Plans	
Progress on Condition (Year 1)	FIA provided written evidence of meeting and communicating with NFA to discuss actions needed to meet future surveillance milestones and close P3 conditions by the first surveillance audit following recertification.	
Progress on Condition (Year 2)	FIA provided a proposal to improve decision making processes such that they respond to important issues in a transparent, timely and adaptive manner and take account of the wider implications of decisions. Ensure the plan improves the flow of information on the fishery's performance and management actions. The plan generally outlined who will assess fishery	

	performance, how frequently this will occur, how this information will be transmitted and to whom and what actions will be taken to address deficiencies. Documentation was provides showing discussions between FIA and FIA over the proposal and general agreement on the proposal.
Status	On target

3.3.14 Condition 3-4 PI 3.2.3(b) Philippines

Performance Indicator	PI 3.2.3 (b) Sanctions
Score	PI score: 70
Justification	Under Fisheries Administrative Order 252 of 2019: Amended Rules and Regulations Governing Distant-Water Fishing by Philippine flagged vessel, a range of sanctions can be applied to Philippine purse seine vessels operating in the EEZ of other nations. These include significant sanctions and fines. The NTMP (2018) provides evidence that sanctions are applied via Adjudication Panels. However, there is no evidence of sanctions being applied consistently against distant water Philippine flagged purse-seine vessels for non-compliance with CMMs and BFAR FAOs.
Condition	By the first surveillance audit following recertification, provide evidence that sanctions to deal with non-compliance exist, **are consistently applied** and are providing effective deterrence.
Milestone Year 1	Note: The milestones for this new condition have been aligned with existing conditions for consistency. Milestones for condition3-5 begin with the year 2 surveillance audit and end in year 5 – which will be the first surveillance audit following recertification.
Milestone Year 2	By the second surveillance audit document and prepare a report on efforts and initiatives by Philippine authorities' to investigate infractions by Philippine flagged distant-water Fishing vessels, especially for those compliance issues documented as non-compliant or priority non-compliant in WCPFC Compliance Monitoring Reports. Expected score: 70
Client Action Plan	**Activities: Activities: Philippine state through the Bureau of Fisheries and Aquatic Resources (BFAR)** • Circulate amended Philippines Fisheries Code that provides sanctions for non-compliance with WCPFC CMMs and DA-BFAR FAOs • Address sanctions through BFAR Compliance TWG and Adjudication Committee. • Amended rules and regulations be shared with NFA and FIA at the earliest time possible. NFA • Investigate case by case basis and provide reports for locally based foreign vessel for non-compliance • PH based vessels are subject to domestic laws and any offence committed on distant waters be reported to the Commission. FIA • Liaise and provide support to both NFA and BFAR for information on non-compliance with CMMs and BFAR FAOs
	Expected outcome: Compliance monitoring reports
Milestone Year 3	By the third surveillance audit, provide a report about proposed actions to improve me the effectiveness (including timeliness) of investigation processes for reported infractions by Philippine flagged Distant-Water Fishing vessels and the imposition of sanctions where warranted. Expected score: 75
	Activities: BFAR

<table>
<tr><td rowspan="2">Client Action Plan</td><td colspan="2">• Investigations of sanctions be shared to coastal state (PNG) through NFA
• Given timeframe of say 60 days to come back to us on non-compliance reports
NFA
• Implement licensing conditions for this
• Enforce domestic laws to enforce these sanctions and if it means to report to the Commission then do so.
• Any offenses committed in the waters of PNG the laws of PNG are applicable.
FIA
• Provide awareness of this to LBFV</td></tr>
<tr><td colspan="2">Expected outcome: Reported number of sanctions issued and non-compliance are well investigated into and communicated in a certain timeframe</td></tr>
<tr><td>Milestone Year 4</td><td colspan="2">By the third surveillance audit, provide a detailed description of the state of investigations (appropriately redacted) into infractions by Philippine flagged Distant-Water Fishing vessels and the outcomes of closed investigations, including any records of financial and other sanctions imposed.

Expected score: 75</td></tr>
<tr><td rowspan="2">Client Action Plan</td><td>Activities:</td><td>BFAR
• Any sanctions applied be communicated in a certain timeframe
Open line communication at all times for issues relating to this NFA
• Enforce and investigate accordingly and communicated to all
• Provide a summary of all sanctions issued by NFA in response to identified infractions, so that a determination of whether they are an adequate deterrence of non-compliance can be made</td></tr>
<tr><td>Expected outcome:</td><td>Summary of identified infractions, enforcement actions and issue sanctions</td></tr>
<tr><td>Milestone Year 5</td><td colspan="2">By the first surveillance audit following recertification, provide evidence to demonstrate that sanctions are being consistently applied to Philippine flagged Distant-Water Fishing vessels and that these sanctions are providing effective deterrence.

Expected score: 80</td></tr>
<tr><td rowspan="2">Client Action Plan</td><td>Activities:</td><td>Provide a summary of all NFA identified infractions, enforcement actions taken in response to these identified infractions, and sanctions issued as a result of the enforcement actions</td></tr>
<tr><td>Expected outcome:</td><td>All these sanctions are reported accordingly with relevant institutions</td></tr>
<tr><td>Consultation on condition</td><td colspan="2">Letter of support from flag state attached</td></tr>
<tr><td>Progress on Condition (Year 2)</td><td colspan="2">The Philippines Bureau of Fisheries and Aquatic Resources reported on efforts and initiatives by Philippine authorities to investigate infractions by Philippine flagged distant-water Fishing vessels, especially for those compliance issues documented as non-compliant or priority non-compliant in WCPFC Compliance Monitoring Reports. Specifically, BFAR reported on CMMS</td></tr>
</table>

	for which it had been found non-compliant and priority non-compliant during the TCC19. These included: ▪ CMM 2014-02a- Vessel Monitoring System. ▪ CMM 2019-04- Sharks ▪ CMM 2019-05-Mobulids ▪ CMM 2020-01 16- FAD Closure ▪ CMM 2020-01 Att 2 03-HSP1 Entry/Exit Included were a description of nitiatives by Philippine authorities to investigate infractions by Philippine flagged distant-water Fishing vessels.
Status	On target

3.3.15 Condition 3-5 PI 3.2.3(d) Philippines

Performance Indicator	PI 3.2.3 (d) Systematic non-compliance	
Score	PI score: 70	
Justification	The information presented in PI 3.2.3 SIa-SIc is insufficient to conclude that systematic non-compliance by Philippine flagged distant water fishing vessels in the WCPO is not occurring. The final Compliance Monitoring Report tabled at WCPFC 18 (2021) identifies the areas of non-compliance CMMs by Philippine flagged vessels especially: ▪ CMM 2014-02 para 9a relating to VMS operation; and ▪ CMM 2018-01, para 16, prohibiting setting FADs during a three month FAD closure. The confidentiality of information in Philippine adjudication process to determine administrative penalties and the failure of BFAR to begin investigation proceedings against potential breaches of CMMs reduces the ability to determine whether non-compliance is systematic in the UOA or whether levels of non-compliance are at levels consistent with other CCMs.	
Condition	By the first surveillance audit following recertification, provide evidence to demonstrate that there is no systematic non-compliance by Philippine flagged Distant-Water Fishing vessels especially in those compliance areas documented as non-compliant or priority non-compliant in WCPFC Compliance Monitoring Reports.	
Milestone Year 1	Note: The milestones for this new condition have been aligned with existing conditions for consistency. Milestones for condition3-5 begin with the year 2 surveillance audit and end in year 5 – which will be the first surveillance audit following recertification.	
Milestone Year 2	By the second surveillance audit document and prepare a report on efforts by Philippine authorities' efforts and initiatives to investigate alleged infractions by Philippine flagged distant-water Fishing vessels, especially those documented as non-compliant or priority non-compliant in WCPFC Compliance Monitoring Reports. Expected score: 70	
Client Action Plan	**Activities:** The client will prepare a report summarizing Philippines government activities to investigate identified infractions	
	Expected Outcome: Summary of actions taken by Philippine government to address identified infractions	
Milestone Year 3	By the third surveillance audit, provide a report about proposed actions to improve me the effectiveness (including timeliness) of the investigation processes for reported infractions by Philippine flagged Distant-Water Fishing vessels especially those infractions documented as non-compliant or priority non-compliant in WCPFC Compliance Monitoring Reports. Expected score: 75	
Client Action Plan	**Activities:**	Applicable laws applied with the states involved
	Expected outcome:	Reporting and enforcement investigations are done and communicated on a certain timeframe to all
Milestone Year 4	By the fourth surveillance audit, provide a detailed description of the state of investigations (appropriately redacted) into infractions by Philippine flagged Distant-Water Fishing vessels and the outcomes of closed investigations, including any records of financial and other sanctions imposed. Expected score: 75	

Client Action Plan	**Activities:**	Cases of infringements be communicated and applicable laws enforced
	Expected outcome:	• Reduce number of cases for LBFV of non-compliances Reduce the number of cases investigated
Milestone Year 5	By the first surveillance audit following recertification, provide evidence to demonstrate that there is no systematic non-compliance by Philippine flagged Distant-Water Fishing vessels especially in those compliance areas documented as non-compliant or priority non-compliant in WCPFC Compliance Monitoring Reports. Expected score: 80	
Client Action Plan	**Activities:** Report to relevant commission bodies for enforced case by case investigated and outcomes made	
	Expected outcome: Compliance Monitoring reports	
Consultation on condition	Letter of support from flag state attached	
Progress on Condition (Year 2)	BFAR requested regional observer reports from the concerned observer program through the CCFS messaging tool but no substantial information was received. In the absence of such a complete report, BFRA's fisheries law enforcement group is challenged to proceed with the investigation or filing of appropriate charges. The Philippines also has an MOU in place with PNG and the implementing arrangements are now being finalized and hopefully adopted by next year. The Implementing Arrangements entail the implementing processes in the execution of sharing information with regard to issues that would satisfy the compliance case files system including observer reports. BFAR provided a report on the status of 176 cases for 2022 and 2023 that were opened by BFAR. Of these 102 are new, 15 are cases in progress, 53 are closed with a sanction imposed and 6 were closed with no sanction.	
Status	On target	

3.4 New conditions

This section includes new conditions opened at the Year 2 Surveillance.

Condition 3-6 PI 3.2.3(a) PNG – New (2023)

Performance Indicator	**PI 3.2.3 (a) Sanctions**	
Score	PI score: 70	
Justification	See rationale for 3.3.2a, During the second surveillance audit it became apparent that while monitoring, control and surveillance do exist, such as the observer program, the VMS, license agreements and catch documentation schemes, there is insufficient evidence to maintain the finding PNG demonstrates an ability to enforce relevant management measures particularly as they relate to P2 for the UoA. Areas where additional evidence is required include: (a) addressing the backlog of compliance cases under investigation (b) ensuring WCPFC CMMs are expediently gazetted so that all vessels operating in PNG fisheries waters, irrespective of flag state, are required to comply with the most recent and active CMMs. (c) Clarifying understanding and application of CMMs. For example, explanations provided to the auditors about compliance matters associated with setting on cetaceans indicate a lack clarity about applicability of CMM 2011-03 and does not provide a demonstrated ability to enforce some of the management measures.	
Condition	By the first surveillance audit following recertification, provide evidence that 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.	
Milestone Year 1, 2	Note: The milestones for this new condition have been aligned with existing conditions for consistency. Milestones for condition3-5 begin with the year 3 surveillance audit and end in year 5 – which will be the first surveillance audit following recertification.	
Milestone Year 3	By the third surveillance audit prepare a report on efforts and initiatives by PNG authorities to identify areas for improvement in their an ability to enforce relevant management measures, strategies and/or rules including, but not restricted to: (a) addressing the backlog of compliance cases under investigation (b) ensuring WCPFC CMMs are expediently gazetted so that all vessels operating in PNG fisheries waters, irrespective of flag state, are required to comply with the most recent and active CMMs. (c) Clarifying understanding and application of CMMs, particularly CMM 2011-03. Expected score: 70	
Client Action Plan	**Activities:**	NFA FIA and NFA coordinate an expedited meeting to address this condition and focus on: (a) addressing the backlog of compliance cases under investigation (b) ensuring WCPFC CMMs are expediently gazetted so that all vessels operating in PNG fisheries waters, irrespective of flag state, are required to comply with the most recent and active CMMs (c) clarifying understanding and application of CMMs. Explanations provided to the auditors about compliance matters associated with setting on cetaceans indicate a lack clarity about applicability of CMM 2011-03 and does not provide a demonstrated ability to enforce some of the management measures.

	Expected outcome:	**1.** NFA a summarised report that is addressing the three points a, b, and c. **2.** NFA and FIA will initiate a draft for corrective actions – proposal if it needed.
Milestone Year 4	By the fourth surveillance audit, provide proposed actions to improve the ability to enforce relevant management measures, strategies and/or rules. Expected score: 75	
Client Action Plan	**Activities:**	NFA and FIA will have a corrective action plan final proposal for a, b, and c. This topic will be included in the consultation meeting for 2024, which is co-organized by NFA and FIA; where stakeholders can discuss and provide feedback to NFA for the development of an enforcement proposal.
	Expected outcome:	NFA final proposal report to enforce relevant management measures, strategies and/or rules a, b, and c.
Milestone Year 5	By the first surveillance audit following recertification, provide evidence that 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. Expected score: 80	
Client Action Plan	**Activities:**	NFA will assess how to include this into IFIMS for monitoring and control. FIA will support NFA on the implementation of MCS system.
	Expected outcome:	NFA provide verifiable evidence that 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.
Consultation on condition	NFA	

Condition 3-7 PI 3.2.3(b) PNG – New (2023)

Performance Indicator	**PI 3.2.3 (b) Sanctions**	
Score	PI score: 70	
Justification	See rationale for 3.3.2b, Sanctions exist, yet because NFA's investigation process is backlogged and evidence often insufficient to apply an administrative penalty, existing sanctions can be no longer be considered to provide an 'effective deterrence."	
Condition	By the first surveillance audit following recertification, provide evidence that sanctions to deal with non-compliance exist, **are consistently applied** and are providing effective deterrence.	
Milestone Year 1, 2	Note: The milestones for this new condition have been aligned with existing conditions for consistency. Milestones for condition 3-5 begin with the year 3 surveillance audit and end in year 5 – which will be the first surveillance audit following recertification.	
Milestone Year 3	By the third surveillance audit prepare a report on efforts and initiatives by PNG authorities to investigate infractions by PNG flagged vessels and Philippine flagged distant-water fishing vessels operating in PNG fisheries waters, especially for, though not restricted to, those compliance issues associated with SSIs (ETP species). Expected score: 70	
Client Action Plan	**Activities:**	Applicable laws applied with the states involved
	Expected Outcome:	Reporting and enforcement investigations are done and communicated on a certain timeframe to all
Milestone Year 4	By the fourth surveillance audit, provide a report about proposed actions to improve the effectiveness (including timeliness) of investigation processes for reported infractions by PNG flagged vessels and Philippine flagged distant-water Fishing vessels operating in PNG fisheries waters. Expected score: 75	
Client Action Plan	**Activities:**	Cases of infringements are communicated and applicable laws enforced for both PNG and Philippine flagged vessels
	Expected outcome:	Reduce number of cases for LBFV of non-compliances
Milestone Year 5	By the first surveillance audit following recertification, provide evidence to demonstrate that sanctions are being consistently applied to Ph by PNG flagged vessels and Philippine flagged distant-water Fishing vessels operating in PNG fisheries waters and that these sanctions are providing effective deterrence. Expected score: 80	
Client Action Plan	**Activities:**	Report to relevant commission bodies for enforced case by case investigated and outcomes made
	Expected outcome:	Compliance Monitoring reports
Consultation on condition	NFA	

3.5 Client Action Plan

Please see section 3.3 for the client action plan.

4 Appendices

4.1 Evaluation Processes and Techniques

4.1.1 Site Visits

An audit plan for the site visit was developed and provided by SCS to the client, management, scientists, and interested stakeholders before the meeting began.

The surveillance audit site visit (onsite meeting) was held in Port Moresby, Papua New Guinea from October 9-11th. Site visit activities included meeting with the client and relevant personnel as well as interested stakeholders such as NFA and BFAR. The team traveled to Lae to meet with crew, captains, and observers and received a tour of two vessels that were currently in port. A list of key meetings and participants is provided in Table 8.

Table 10. Audit Plan: Key Meetings and Locations

Meeting Date	Location	Topic	Attendees
Monday October 9, 2023	Port Moresby, Papua New Guinea	Client Opening Meeting	FIA PNG Team NFA SCS Assessment Team Eric Gilman
Monday October 9, 2023	Port Moresby, Papua New Guinea	Principle 2 Conditions	FIA PNG Team SCS Assessment Team NFA Observers and personnel Eric Gilman
Tuesday October 10, 2023	Lae, Papua New Guinea	Crew/Captain Interviews and meetings with Frabelle	Frabelle Management staff FIA PNG Team SCS Assessment Team NFA Eric Gilman Captains/Crew
Tuesday October 10, 2023	Lae, Papua New Guinea	Meeting with observers and debriefers at NFA offices	NFA observers/debriefers
Wednesday October 11, 2023	Port Moresby, Papua New Guinea	Principle 3 Conditions	SCS audit team FIA PNG Team Eric Gilman Glenda Barry (NFA)
Wednesday October 11, 2023	Port Moresby, Papua New Guinea	Meeting with NFA Observers	SCS assessment team NFA Observers
Wednesday October 11, 2023	Port Moresby, Papua New Guinea	Principle 3 Conditions – PH	BFAR SCS assessment team FIA PNG Glenda Barry (NFA)

Wednesday October 11, 2023	Port Moresby, Papua New Guinea	Client Closing Meeting	SCS Assessment Team FIA PNG Team Eric Gilman NFA

4.1.2 Stakeholder Participation

The CAB identified relevant stakeholders for this fishery through the professional networks of SCS and the audit team as well as consulting with organizations working in the area where the fishery operates. A list of individuals from different organizations was compiled including representatives from the government, private sectors, and non-profit sectors working at regional and national levels. Stakeholders on the list received an email with the surveillance announcement, the MSC stakeholder template to provide input, and an invitation to participate at the onsite meeting. The announcement was sent on October 20th, 2023, for the site visit conducted in Port Moresby and Lae, Papua New Guinea from October 9th to 11th, 2023. The announcement was also published and contact information (email) for the CAB representative was made available on the Track a Fishery website.

Stakeholder comments received prior to the closing of the 30-day consultation period are included in Section 4.2.

No stakeholders requested a private meeting with the team.

4.2 Stakeholder input

The International Seafood Sustainability Foundation (ISSF) submitted written comments, full stakeholder input and CAB responses are provided in Table 9below.

Table 11. Stakeholder Comments and Responses from Team by Performance Indicator

HS Advocacy ISSF urges the CAB to share the following specific actions with the client, as they are expected to contribute to meeting the existing conditions. 1) Publicly support the high-level appeals for RFMOs developed by global NGOs that are participants in the NGO Tuna Forum 2) Advocate to the flag state delegations of the fishery and all other parties associated with the fishery at WCPFC to take a strong public position on advancing harvest strategies and HCRs, in line with ISSF's RFMO priorities and ISSF's Position statements. 3) Publicly support ISSF Position Statements that contain detailed asks to the RFMOs on Harvest Strategies and Harvest Control Rules, as well as on other issues like Electronic Monitoring, transshipment, etc. 4) Support technical work of the RFMO as well as capacity workshops on Management Strategy Evaluation in the region so as to increase the leverage of RFMO members for the discussion and adoption of robust Harvest Strategies and HCRs.	ISSF RFMO Priorities ISSF WCPFC Position Statements: https://www.iss-foundation.org/downloads/30957/?tmstv=1697704160 https://ngotunaforum.org/rfmo-advocacy/	Thank you for your comment. The assessment team has shared these actions with the client as requested.	Accepted (condition on target)
Transition to v3.0 The fishery should elect to transition to the new MSC standard 3.0 immediately. Transitioning to the new standard will also entail the adoption of other sustainability practices of key importance that ISSF is currently advocating for, such as: · Prohibiting shark finning. · Higher levels of monitoring and surveillance. · Better management of ETP impacts. · Better management of FAD impacts	https://www.msc.org/species/tuna/what-msc-fisheries-standard-version-3-means-for-tuna	Thank you for your comment. The fishery will transition to new standard within the MSC required timelines. We have passed your recommendations on to the client.	Accepted (condition on target)
Description of Fishery FAD operations ISSF acknowledges the fishery's efforts in FAD management but emphasizes the need for more detailed information. The fishery should provide a comprehensive description of its FAD operations, including drifting and anchored FADs. This description should include data like: the annual deployment of FADs; FAD design and materials; FAD marking methods; the number of tracking buoys used annually; and the number of lost and abandoned FADs, as well as FADs recovered. These details will facilitate stakeholder input and help identify areas for improvement. The action plan aims to close the condition on FAD management by the first	ISSF 2023-10: Recommended Best Practices for FAD Management in Tropical Tuna Purse Seine Fisheries (Update to ISSF 2019-11)	Thank you for your comment. Currently the fishery has open conditions relating to FAD information. We have passed your recommendations on to the client.	Accepted (condition on target)

surveillance audit after recertification, which seems too long an amount of time. Sufficient knowledge is publicly available from the extensive ISSF body of research and best practices to allow the fishery to have a more rapid transition to sustainable FAD management practices.			
Clarifications on post-pandemic observer coverage A shortage of fully trained observers post-pandemic was noted at recent FFA MCS working group meetings, making it challenging to achieve full coverage.] ISSF requests the CAB to confirm if the fishery has returned to the WCPFC required 100% observer coverage. If not, please specify the exact percentage, outline the steps the fishery is taking to reach 100%, and ensure the collection of necessary fisheries data and monitoring of vessel activities at sea (e.g., using EM) in the meantime.		Thank you for your comment. The UoA observer coverage was reduced during the pandemic, though Philippines flagged vessels maintained 100% coverage. Evidence from this audit suggests the entire fleet is now back to 100% coverage as required.	Accepted (condition on target)
FAD management strategy ISSF suggests incorporating a description of the UoC's FAD management strategy in the report. This strategy should encompass data collection and analysis to assess FAD impacts on habitat and P2 species, considering cumulative effects with other tuna fisheries in the region. ISSF Technical Reports 2023-10, 2020-11, and 2018-19A provide valuable guidance for developing a comprehensive FAD management plan. The six elements of FAD management of utmost importance are: (1) Comply with flag state and RFMO reporting requirements for fisheries statistics by set type (2) Voluntarily report additional FAD buoy data for use by RFMO science bodies (3) Support science-based limits on the overall number of FADs used per vessel and/or FAD sets made (4) Use only non-entangling FADs to reduce ghost fishing (5) Mitigate other environmental impacts due to FAD loss including through the use of biodegradable FADs and FAD recovery policies (6) For silky sharks and elasmobranchs in general (the main bycatch issue in FAD sets) implement further mitigation efforts Re: (2), ISSF recommends the client fishery provides information on position and acoustic record for the whole track or, alternatively, at least one position and echosounder biomass acoustic record per day to scientific research institutes or to WCPFC and the RFMO Science Provider.	ISSF 2023-10: Recommended Best Practices for FAD Management in Tropical Tuna Purse Seine Fisheries (Update to ISSF 2019-11). ISSF 2020-11: Recommended Best Practices for Tropical Tuna Purse Seine Fisheries in Transition to MSC Certification, with an Emphasis on FADs. ISSF 2018-19A: Workshop for the Reduction of the Impact of Fish Aggregating Devices' Structure on the Ecosystem. ISSF non-entangling and biodegradable FADs guide. Maitane Grande, Iñigo Onandia, José Maria Galaz, Jon Uranga, Nerea Lezama-Ochoa, Jefferson Murua, Jon Ruiz, Igor Arregui, Hilario Murua, Josu Santiago. Assessment on accidentally	Thank you for your comments, we have passed them on to the client. The assessment team notes that there has been a decrease in FAD sets by the UoA and will be closing condition 2-4 (PI 2.4.1). The fleet also provided evidence of deploying non-entangling FADs in recent years and aFADs were reported deployed by one fishing company in 2020 (n = 50) and none since. The client group does have a FAD management policy in place that is guided by ISSF principles. We appreciate you pointing out the work by Grande et al. and will also pass this information along to the client.	Accepted (condition on target)

Re: (3), In regard to aFADs, the report does not clarify if the fishery is deploying this type of FADs but it does indicate that sets are made. In case the fishery is actively deploying aFADs, ISSF recommends that the client fishery provides support to science-based limits on the overall number of aFADs in an area and set maximum aFAD limits per area. Re: (6), Recent research on silky shark handling and release techniques and post-release mortality has been carried out by an MSC-certified tuna fishery in the Indian Ocean (Grande et al., 2022). Similar work could be undertaken by the UoC to ensure that the post-release mortality does not hinder the population of silky shark.	captured silky shark post-release survival in the Indian Ocean tuna purse seine fishery. IOTC-2022-WGFAD03-09. https://iotc.org/documents/WGFAD/03/09 ISSF 2023-11A: ISSF Workshop on Deck Bycatch Release Devices (BRDs) for Vulnerable Species in Tropical Tuna Purse Seiners.		
Unobserved mortality ISSF is concerned that the report may underestimate impacts on ETP shark species due to entanglement on drifting FADs. Silky and oceanic whitetip sharks (and sea turtles) are at risk of entanglement. The UoC should create a plan for tracking unobserved shark mortality on actively tracked and lost/abandoned FADs. Lower-risk entanglement FADs reduce but don't eliminate such mortality, especially as FADs degrade. Previous studies found significant unobserved mortality even with partially non-entangling FADs, where entangled animals might detach and sink within about 1.5 days. Further, ISSF recommends adopting fully non-entangling FADs and biodegradable FADs, which are mandatory in the WCPFC from January 1, 2024. Additionally, the removal of entangling FADs from the water should be incorporated into the FAD management plan as an urgent priority to minimize potential ongoing negative impacts.	Filmalter, J.D., Capello, M., Deneubourg, J., Cowley, P.D. and Dagorn, L. (2013), Looking behind the curtain: quantifying massive shark mortality in fish aggregating devices. Frontiers in Ecology and the Environment, 11: 291-296. https://doi.org/10.1890/130045.	Thank you for your comments. We have passed these suggestions regarding improving information on unobserved mortality of silky sharks on to the client group. The team notes that FAD use has been decreasing in this UoA and the fleet provided evidence of deploying non-entangling FADs in recent years. See the re-scoring of PI 2.4.1 – Habitats outcome for more information.	Accepted (condition on target)
Traceability The report indicates that the fishery is allowed to transship at sea or in port, some fishing outside the UoC may occur and that CoC is not initiated at sea. Observer data (if available) can help minimize traceability risks. But evidence must be presented at the 2 surveillance audit report on how this information is utilized to assure fishery traceability and integrity in relation to MSC-certified product. The RFMO transshipment observer program lacks product traceability	ISSF RFMO Priorities ISSF Position Statements. https://www.iss-foundation.org/research-advocacy-recommendations/our-scientific-program/scientific-reports/download-info/issf-2022-10-transshipment-	As specified in the Scope Extension report published on May 2023, Chain of Custody begins once the fish is offloaded from the fishing vessel. Separate Chain of Custody will be required for the first receivers of the fish, including processing plants or carrier vessels/transshipment vessels. Any vessels receiving product via transshipment will require their own CoC	Accepted (condition on target)

monitoring and verification competence, making it ineffective for risk mitigation. More details are needed on this process at the audit. Clarification is also needed on the use of EM systems for transshipment verification. Lastly, the fishery's plan for monitoring landing sites should be better described in the audit report. ISSF encourages the client fishery to advocate to the delegation of and all other relevant delegations associated with the fishery at WCPFC to take a strong public position on transshipment measures at upcoming WCPFC meetings. Use ISSF's position statement as a reference	strengthening-tuna-rfmo-transshipment-regulations	certificate and therefore is outside of the scope of the MSC fishery certificate. Traceability and segregation risks when transshipping at sea or in port would be evaluated as part of the Chain of Custody audit. The assessment team did not identify a risk that the UoA/UoC vessels operate outside the UoA areas. FIA PNG has implemented iFIMS, which monitors all domestic and foreign landings and transshipments. Additionally, they do not transship at sea. Please refer to the PCR for more information here: https://fisheries.msc.org/en/fisheries/png-fishing-industry-associations-purse-seine-skipjack-yellowfin-and-bigeye-tuna-fishery/@@assessments	

4.3 Revised Surveillance Program

Table 12. Fishery surveillance program

Surveillance level	Year 1	Year 2	Year 3	Year 4
Level 4	off-site – remote audit due to COVID-19	on-site	off-site	on-site

Table 13. Timing of surveillance audit

Year	Anniversary date of certificate	Proposed date of surveillance audit	Rationale
2023	11 May 2020	October 2023	The selection of the audit date was carefully coordinated to align with the availability of documentation presented by the client and the assessment team, ensuring their on-site presence in Papua New Guinea.

Table 14. Surveillance Level Rationale

Year	Surveillance activity	Number of auditors	Rationale
2	On-site	3 auditors on-site holding meetings in-person with 1 auditor supporting remotely.	The assessment team concluded that the acquisition of information essential for validating progress toward Principle 2 would be most effectively conducted through on-site data collection, thereby ensuring optimal clarity in the evaluation process.

4.4 Harmonised Fishery Assessments

4.4.1 Principle 1

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

Since the certification of this fishery there have been no changes no harmonized scored for Skipjack. Since the Scope Extension of this fishery to include Bigeye, there have been no changes to harmonized scores.

For Yellowfin tuna CABs increased scores for Outcome PI (1.1.1). Updates on harmonization for this stock included below.

WCPO Yellowfin

For WCPO yellowfin tuna, Principle 1 has been harmonized with the fisheries listed in Table 13 based on the 2020 stock assessment. The rationale for scoring differences in outlined in Table 14 and additional information on recent harmonization discussions for yellowfin in the WCPO is outlined in Table 15. Harmonization discussions will commence in 2023 and status of the WCPO yellowfin tuna harvest strategy and harvest control rule, scheduled for implementation in June 2023, will form the basis of the P1 harmonization discussions.

Table 15. Fisheries in the MSC System Considered for Harmonization for Principle 1 for yellowfin stocks as of February 2021 and updated in August 2022.

Fishery name	CAB	Report Version	1.1.1	1.1.2	1.2.1	1.2.2	1.2.3	1.2.4
AGAC four oceans Integral Purse Seine Tropical Tuna Fishery (WCPO)	Lloyds Register	PCR Mar. 2022	100	n/a	70	60	80	95
American Samoa EEZ Albacore and Yellowfin Longline Fishery	Control Union	SV Yr 3 April 2021	100	n/a	70	60	80	95
Australia Eastern Tuna and Billfish Fishery (albacore tuna, yellowfin tuna, bigeye tuna and swordfish)	q.inspecta GmbH	PCR Aug. 2020	90*	n/a	70	60	80	95
Fiji albacore and yellowfin tuna longline	Lloyds Register	SV Yr 3 June 2021	100	n/a	70	60	90*	95
French Polynesia albacore and yellowfin longline fishery	Control Union	SV Yr 2 July 2021	100	n/a	70	60	80	95
Indonesia pole-and-line and handline, skipjack and yellowfin tuna of Western and Central Pacific archipelagic waters	Global Trust	PCR Revised Jan. 2021	90*	n/a	70	60	80	95
Kiribati albacore, bigeye and yellowfin tuna longline fishery	Control Union	PCR Jan. 2021	90*	n/a	70	60	80	95

Micronesia Skipjack, Yellowfin and Bigeye Tuna Purse Seine Fishery	Control Union	PCR Aug. 2021	100	n/a	70	60	80	95
MIFV RMI EEZ Longline Yellowfin and Bigeye Tuna	Control Union	SV Yr 1 May 2021	100	n/a	70	60	80	95
The Maluku and N. Maluku Associations, Indonesian Handline Yellowfin Tuna Fishery	SCS	SV Yr 1 Dec. 2021	100	n/a	70	60	80	95
Nauru Skipjack, Yellowfin, and Bigeye Tuna Purse Seine Fishery	SCS	PCR July 2022	100	n/a	70	60	80	95
Owasebussan Co. Ltd. North Pacific Longline Fishery for Albacore, Yellowfin, & Bigeye Tuna	SCS	SV Yr 1 June 2022	90*	n/a	70	60	80	95
Zhejiang Ocean Family CO., LTD Pacific and Indian Ocean Longline Tuna and Swordfish	SCS	ACDR in progress	100	n/a	70	60	80	95
Pan Pacific yellowfin, bigeye and albacore longline fishery	Control Union	SV Yr 1 June 2022	90*	n/a	70	60	80	95
Philippine Small-Scale Yellowfin Tuna (Thunnus albacares) Handline Fishery	SCS	PCR June 2022	100	n/a	70	60	80	95
PNG Fishing Industry Association's purse seine Skipjack & Yellowfin Tuna Fishery	SCS	PCR May 2020	100	n/a	70	60	90*	95
PNA Western and Central Pacific skipjack and yellowfin, unassociated / non FAD set, tuna purse seine	Lloyds Register	SE PCR Dec. 2021	100	n/a	70	60	90*	95
PT Citraraja Ampat, Sorong pole and line skipjack and yellowfin tuna	DNV	SV Yr 2 Oct. 2021	90*	n/a	70	60	90*	95
Solomon Islands longline albacore and yellowfin tuna fishery	SCS	SV Yr 1 Sept. 2020	90*	n/a	70	60	80	95
Solomon Islands skipjack and yellowfin tuna purse seine and pole and line	SCS	PCR June 2021	90*	n/a	70	60	80	95
SZLC CSFC & FZLC FSM EEZ Longline Yellowfin and Bigeye Tuna	Control Union	SV Yr 2 Sept. 2021	100	n/a	70	60	80	95
SZLC, CSFC & FZLC Cook Islands EEZ albacore, yellowfin and bigeye longline fishery	Control Union	SV Yr 1 June 2022	100	n/a	70	60	80	95
Tri Marine Western and Central Pacific Skipjack and Yellowfin Tuna	SCS	PCR Sept. 2021	100	n/a	70	60	80	95
Tropical Pacific yellowfin and skipjack free- school purse seine fishery	Control Union	SV Yr 1 Jan. 2022	90*	n/a	70	60	80	95

WPSTA Western and Central Pacific skipjack and yellowfin free school purse seine	SCS	SV Yr 3 Aug. 2022	100	n/a	70	60	80	95
US Pacific Tuna Group Purse Seine FSC and FAD Set Fishery	SCS	PCR June 2022	100	n/a	70	60	80	95
Hawaii longline swordfish, bigeye and yellowfin tuna fishery	Control Union	PCDR June 2022	100	n/a	70	60	80	95
TTKV WCPO Skipjack and Yellowfin Tuna Purse Seine Fishery	SCS	ACDR May 2022	> 80	n/a	60-79	60-79	> 80	> 80
SI WCPO skipjack and yellowfin tuna purse seine fishery	SCS	PCR July 2022	100	n/a	70	60	80	95
Tri Marine Pacific Ocean longline fishery	SCS	ACDR in progress	> 80		60-79	60-79	> 80	> 80
Harmonized scores (2016)	**SCS, Lloyd's Registry, DNV, and CU**		**90**	**n/a**	**70**	**60**	**80**	**95**
Harmonized scores Feb 2021 (based on 2020 assessments)	**SCS, Lloyd's Registry, DNV, and CU**		**100**	**n/a**	**70**	**60**	**80**	**95**

* Differences in scoring

Table 16. Rationale for yellowfin tuna scoring differences in the WCPO

If applicable, explain and justify any difference in scoring and rationale for the relevant Performance Indicators (FCP v2.1 Annex PB1.3.6)
The differences in scoring for Pi 1.1.1 and PI 1.2.3 noted above in Table 8 have been discussed and the fisheries have agreed to harmonize with the agreed upon scores stemming from the February 2021 discussion at the time of their next audit.

Table 17. Overlapping fisheries WCPO Yellowfin/Skipjack

Supporting information
Describe any background or supporting information relevant to the harmonization activities, processes and outcomes.
2019 In 2019 triggered harmonization discussions amongst CABs to review the previously agreed-upon scores for these skipjack/yellowfin stocks. The harmonization discussions did not result in a change to scores, however, they led CABs to seek further guidance on interpretation of the standard from MSC. The interpretation remains unanswered, but the MSC The issues reviewed included: • Higher score for PI 1.2.1a - The MSC identifies a Harvest Control Rule in place (even if just a generally understood one) as one of the key elements required in a harvest strategy (MSC Standard v2.01 GSA2.4) and so the lack of any form of HCR is relevant to the logic behind whether the harvest strategy elements (as defined by MSC) work together as required by the SG80 level for

Scoring Issue a for PI 1.2.1. Applying the MSC definition of a harvest strategy, it is understood that a harvest strategy for a fishery could not be given an unconditional pass for PI 1.2.1 without an HCR being in place. Nevertheless, SCS with other CABs recognize the potential validity of this argument and have in response submitted an interpretation request to MSC on July 2019, to clarify whether the second part of 1.2.1a can meet SG80 if a generally understood or well-defined HCR is not in place. MSC did not provide a response to the interpretation request and acknowledging that the intent isn't clear in the requirements and guidance, that an interpretation request was not appropriate in this case, and that this issue has been incorporated into the policy development cycle for the upcoming FSR, CABs have agreed that for now this condition cannot be closed until the related condition on PI 1.2.2 is closed.

- PI 1.2.2a - Argument that a generally understood HCR is in place and not just available. This does not affect the score for this PI but could affect how PI 1.2.1a is scored and would also allow a different approach for PI 1.2.2c. There has previously been agreement among CABs that there is not even a generally understood HCR for skipjack tuna (or other tuna species). A 60 score has been achieved for 1.2.2a on the basis of 'available' HCRs not one that is 'in place'. All measures introduced by WCPFC have been negotiated outcomes that, although important and positive for stock conservation, had not been considered to follow even a generally understood HCR. The MSC Interpretation on HCRs instructs CABs that, when there is uncertainty over whether an HCR meets the requirements of 'generally understood', they should follow the precautionary approach and award a lower score. So, in the absence of new and stronger evidence that the previous decision was incorrect, the status quo should apply, and a condition be maintained.

2020
Harmonization discussions amongst CABs was initiated via email in early 2020 by SAI Global (email Feb. 5, 2020) as they prepared to announce the ACDR for the Indonesian Pole-and-Line and Handline fisheries in the WCPO. SAI Global score for the WCPO yellowfin stock in the ACDR was higher for PI 1.2.1 than previously agreed-upon scores for this stock by CABs (SAI PI1.2.1 score=85; other CABs PI1.2.1 score=70). While the harmonization discussions did not result in a change to scores, it was recognized that a new assessment for yellowfin tuna (as well as bigeye tuna) was to be completed in late 2020, and it should form the basis of further harmonization efforts. Based on results of the 2020 yellowfin stock assessment and recalling the outcome of the 2020 harmonization discussions, SAI scores for PI 1.2.1 were harmonized which is reflected in their revised PCR published in January 2021.

2021 - February
With the adoption of the 2020 WCPO yellowfin stock assessment by the WCPFC in December 2020, harmonization discussions amongst CABs were reinitiated via email in February 2021 with the new assessment forming the basis of the scoring. After a thorough vetting of available information CABs reached agreement on scores for the WCPO yellowfin stock; PI1.1.1=100, PI1.2.1=70, PI1.2.2=60, PI1.2.3=80, and PI1.2.4=95. The only difference in scoring between the 2016 and 2021 harmonization discussions concerns PI 1.1.1, and the increased score results from a more optimistic view of stock status in 2020 relative to stock status in 2017.

Estimates of stock status in the 2020 stock assessment was based on a structural uncertainty grid of 72 alternative model formulations, generally considered to be more robust than the 2017 assessment, leading to more optimistic determinations of stock status (Vincent et al., 2020). This was strongly linked to the incorporation of new growth information, an alternative treatment of tagging data, assumptions regarding selectivity (resulting in a better fit to the data), and the use of maturity at length information.

Was either FCP v2.1 Annex PB1.3.3.4 or PB1.3.4.5 applied when harmonising?	Yes
Date of harmonisation meeting	February 2021,

Principle 2:

Following harmonization requirements outlined in Table GPB1:

PIs		Required to harmonise	Harmonization Comments
PI 2.1.1a	Partially	For stocks that are 'main' in both UoAs, harmonise status relative to PRI (at SG60,80 and 100), and if below PRI, harmonise cumulative impacts at SG80 (not at SG60).	The only main primary species identified is Bigeye Tuna. The score originally awarded was of 100 for SI a, which aligns with the scores of several other fisheries. Since the initial certification of the fishery there has been no changes to Bigeye tuna as a secondary species.
PI 2.2.1a	Partially	For stocks that are 'main' in both UoAs, harmonise status relative to Biologically Based Limits (at SG60, 80, and 100), and if below Biologically Based Limits, harmonise cumulative impacts at SG80 (not at SG60).	There are no main species
PI 2.3.1a	Partially	Harmonise recognition of any limits applicable to both UoAs (at SG60, 80 and 100), and cumulative effects of the UoAs at SG80 and SG100 (not at SG60).	There are no limits applicable to ETP species, cumulative effects are already indirectly taken into account as the team assessed outcome of ETP species weighting impact of the UoA and status of the ETP species. No changes since initial certification.
PI 2.4.1b	Partially	Harmonise recognition of VMEs where both UoAs operate in the same 'managed area(s)' (see Guidance to the MSC Fisheries Standard).	Recognized coral reefs as VMEs. No changes since initial certification.
PI 2.4.2 a, c	Partially	Harmonise scoring at SG100 since all fishery impacts are considered (not at SG60 or 80).	With other fisheries employing DFADS, PI 2.4.2 is harmonized with other fisheries at the SG100 level. No changes since initial certification.

Principle 3:

Scoring differences among assessments within groups were sometimes due to differences in interpretation regarding the most relevant level(s) of management for a particular scoring issue or indicator. The MSC has provided limited guidance on how to score P3 indicators with respect to multiple tiers of management, and different assessment teams often take slightly different scoring approaches, thus there are no agreed P3 harmonized scores.

5 Vessel List

No.	Vessel Name	IRCS	Flag State	Flag Registration
1	**Alpine Rose**	P2V4189	PG	000-937
2	**Amaryllis 88**	P2V5709	PG	00-1594
3	**Cherry Blossoms 88**	P2V5068	PG	000-948
4	**Discovery 101**	DUCK	PH	05-0000237
5	**Discovery 102**	4DET8	PH	11-0000340
6	**Dolores 787**	P2V5642	PG	00-1513
7	**Dolores 838**	DUL6785	PH	12-0000179
8	**Dolores 839**	4DEF-7	PH	12-0003458
9	**Dolores 849**	4DEF-6	PH	12-0000110
10	**Dolores 858**	DUFO	PH	10-0002817
11	**Dolores 859**	DUGM	PH	10-0003031
12	**Dolores 865**	DUGC	PH	10-0003054
13	**Dolores 869**	DUHQ	PH	10-0003090
14	**Dolores 870**	DUID	PH	13-0001621
15	**Dolores 872**	DUIE	PH	13-0001622
16	**Dolores 873**	4DJB-5	PH	05-0003290
17	**Dolores 878**	DUM-3170	PH	12-0001818
18	**Gabrielle L T**	4DFC-5	PH	00-0002559
19	**Gardenia 888**	P2V5654	PG	00-1539
20	**Golden Sapphire 88**	P2V5655	PG	NMA-1019
21	**Lauren Marie Taylor**	DUA-6679	PH	00-0003069
22	**Lavender 888**	P2V5406	PG	00-1227
23	**Milflores 888**	P2V5653	PG	00-1540
24	**Niupelalip No. 8**	P2V5491	PG	00-1322
25	**Pink Carnation 88**	P2V5045	PG	000-905
26	**Princess Janice 168**	DYUW	PH	120001653
27	**Purple Beauty 888**	DUE6131	PH	00-0002671
28	**Purple Lilac 888**	P2V5408	PG	00-1210
29	**Queen Jenny No. 138**	4DET-6	PH	120001831
30	**Queen Jina 101**	DUIY	PH	120003015
31	**Red Robin 888**	P2V5125	PG	00-1003
32	**Red Tulip 888**	P2V5278	PG	00-1121
33	**Sophia Martina**	4DFC-6	PH	00-0002560
34	**Sunflower 8**	DUE6208	PH	00-0003240
35	**Tobias Miguel**	4DFC-7	PH	00-0002561

36	**FB Treska**	DUG9015	PH	00-0002818
37	**FV Chenille**	DUG9082	PH	00-0002267
38	**Jasmin 888**	DUE-6325	PH	00-0003917
39	**Joe Turner**	DYUD	PH	00-0003935
40	**John Fisher**	DUTT	PH	00-0003936
41	**Kamilah**	DUM-3346	PH	12-0002957
42	**Mavienne**	DUM-3347	PH	12-0002975
43	**Queen Evelyn 101**	DUK-2237	PH	12-0003554
44	**Viva Eagle 707**	P2V5805	PG	001743
45	**Viva Lion 707**	P2V5806	PG	001749
46	**Veera**	4DME-6	PH	12-0003636
47	**Queen Janice 101**	DYHS	PH	12-0003648
48	**Kaile 888**	P2V5566	PG	001410
49	**Marita 88**	P2V5580	PG	004122
50	**Viva Wantwant 707**	P2V5815	PG	001753
51	**Papa Resty**	4DFB8	PH	11-0001005
52	**Viva Bear 707**	P2V5812	PG	001751
53	**Margarita No. 8**	4DFB9	PH	12-0002054
54	**Queen Marilou 888**	4DMQ-5	PH	12-0003678
55	**Belinda**	9108946	PH	00-0004298

6 References (Bibliography)

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7 Template information and copyright

A controlled document list of MSC program documents is available on the MSC website (https://www.msc.org/for-business/certification-bodies/supporting-documents).

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