Ecuador skipjack, yellowfin, and bigeye tuna - purse seine (SUSTtainableTUNAfishing)

Ecuadorian tuna purse seine fishery in the EPO

Pre-Assessment Report

Conformity Assessment Body (CAB)	Kiwa España SLU
Fishery client	BELOUVE S.A.S ALDAN PACIFIC S.A.S PESQUERA DOÑAROGE S.A PESQUERA FINISTERRE S.A.
Assessment type	Pre-assessment
Date	December 2024

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2. Glossary

CAB (MSC) Conformity Assessment Body
CITES Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMM Conservation and Management Measure
CoC Chain of Custody
CPUE Catch per Unit Effort
EEZ Exclusive Economic Zone
EPO Eastern Pacific Ocean
ETP Endangered, Threatened or Protected species
F Fishing mortality
FADs Fishing Aggregation Devices
FAO Food and Agriculture Organization of the United Nations
FCP Fisheries Certification Process
FIP Fisheries Improvement Plan
FMSY Fishing mortality at MSY
HCR Harvest Control Rule
IATTC Inter-American Tropical Tuna Commission
ISSF International Seafood Sustainability Foundation
ITQ Individual Transferable Quota
IUCN International Union for Conservation of Nature
Kg Kilogram
LRP Limit reference point
MCS Monitoring, Control and Surveillance
MFCL MULTIFAN-CL Stock Assessment Software
MP Management plan/procedures
MSC Marine Stewardship Council
MSE Management Strategy Evaluation
MSY Maximum Sustainable Yield
NGO Non-Government Organisation
PI Performance Indicator
PRI Point of Recruitment Impairment
RFMO Regional Fisheries Management Organisations
ROP Regional Observer Programme
SB Spawning Biomass
SBMSY Spawning biomass at MSY SC Science Committee
SI Scoring Issue
SSB Spawning Stock Biomass
t and mt metric ton
TAC Total Allowable Catch

TRP Target reference point

UoA Unit of Assessment

UoC Unit of Certification

VME Vulnerable Marine Ecosystem

WWF World Wildlife Fund

3. Executive summary

This pre-assessment was requested by a group of 4 fishing companies, henceforth 'the client', to Kiwa España SLU. The purpose of this pre-assessment is to assess the performance against the requirements of the MSC Fisheries Standard of the **Ecuadorian tuna purse seine fishery in the Eastern Pacific Ocean**, with 3 tuna species assessed as P1: skipjack tuna, yellowfin tuna and bigeye tuna.

The experience of the team that has prepared this pre-assessment report is summarized below:

Macarena García, holds a degree in Environmental Sciences from the Polytechnic University of Madrid and a Master's in Sustainable Management of Coastal and Marine Systems from the University of Barcelona. She was the Manager of the Inemar Association (Association for the Study of the Sea and its Resources). She worked at the public company TRAGSATEC as a technician in the Maritime Affairs and Fisheries Directorate, in the Marine Environment Unit, and at TRAGSA as a Technician in the Environmental Services Department. In both companies, her work was related to the impact of human activities on marine resources. She has participated in scientific publications such as "Ecological framework for the management of different habitats in Spain (Council Directive 92/43/CE)", "Supporting report accompanying the thematic cartography of the MedRAS Project", and "Draft of the Basis for Marine Planning in Spain". She was responsible for the technical and scientific coordination of the bilingual publications "Mares de España" and "Human Activities in the Seas of Spain" edited by the Ministry of Environment, Rural, and Marine Affairs of Spain.

In 2011, she began her professional career in the field of certification and conformity verification for the fishing and aquaculture sector at Bureau Veritas Certification. Initially as an inspector and technical expert in fishing, she evolved over the years to acquire the necessary competencies and qualify as a lead auditor for third-party schemes and sustainability project manager, always linked to the fishing sector. In 2015, she assumed the role of scheme manager for MSC fisheries and MSC Chain of Custody for all of Bureau Veritas.

In February 2021, she joined Kiwa España SLU to develop the business line for fishery products both in Spain and for other international subsidiaries. The projects to be developed include inspections on supermarket platforms, supplier audits, private label projects, sustainability policies, and second and third-party scheme certifications, notably MSC fisheries and MSC Chain of Custody.

Regarding the MSC Fisheries scheme, she is qualified as a Team Leader, meeting the competencies in local fishery knowledge and traceability.

For this pre-assessment Macarena García acted as team leader.

Dr. **Virginia Polonio** holds a B.Sc. in Environmental Sciences and an M.Sc. in Fisheries Management and Aquaculture, both from the University of Cádiz. Additionally, she obtained her PhD in Biodiversity and Natural Resources from the University of Oviedo, during which she gained valuable experience in fisheries management research and the protection of Vulnerable Marine Ecosystems, such as coral reefs.

Throughout her doctoral studies, Virginia authored several articles describing new coral species and honed her skills in benthic ecology and ecosystem management. Prior to pursuing her PhD, she worked as a technician at the Spanish Oceanographic Institute, where she conducted sea-based research and gained practical experience in assessing fisheries stocks. Notably, she contributed to the Spanish National Basic Plan of Data, collecting and evaluating fishing data in the ICES and CECAF areas. During this time, she conducted feeding habit and age/size studies on various commercial species (such as hake, anchovy, sharks, mackerel, and squid) to promote an ecosystem-based approach to commercial fisheries in the Gulf of Cádiz and the Strait of Gibraltar.

Virginia brings extensive expertise to MSC assessments, having served as both a team member and lead assessor on numerous full assessments, including ISF Capelin, ISF Mackerel, CSHMAC herring, Cantabrian sardine, North Atlantic albacore, squat lobster, blue sharks, swordfish, and Chilean Austral hake, among others.

Currently, she works as an independent consultant through her new company, Vekamar Sustainable Fisheries Consulting.

For this pre-assessment Virginia acted as Principle 2.

The client's strengths are:

1. Comprehensive Monitoring and Data Collection: The IATTC has implemented a robust data collection program that tracks both target and non-target species, including critical ETP species such as turtles, dolphins, and sharks. The monitoring of physical oceanographic factors also enables a better understanding of how climate conditions, like El Niño and La Niña, influence the ecosystem, allowing for early detection of any potential risks to the ecosystem (IATTC SAC 13-10; SAC 14-11).

2. Research and Modeling Support: There is significant ongoing research into the impacts of tuna fishing on the ecosystem. The development of ecological models like ETP7 and ETP8 has allowed for a detailed understanding of how fishing efforts, especially related to FADs (fish aggregating devices), affect the biomass of key species. These models are updated with the latest data and serve as a critical tool in assessing the risk to ecosystem structure and function (Griffiths et al., 2021).

3. Ecosystem-Based Management Framework: The IATTC's application of ecosystem considerations, as outlined in the Antigua Convention, integrates precautionary approaches and adaptive management strategies. This allows for the dynamic updating of conservation measures to ensure the sustainability of tuna stocks and the broader marine ecosystem, promoting a balanced approach to ecosystem health and fisheries management (IATTC 2010).

4. Ecuador has taken substantial steps to address the EU IUU regulation yellow label status.

The client's weaknesses:

1. Uncertainty in FAD Impact Data: Despite the comprehensive monitoring program, there remains a gap in the reliable data regarding the exact number of FADs deployed, their location, and the extent to which they may interact with sensitive habitats such as coral reefs. This uncertainty limits the ability to fully assess the long-term ecological impacts of FADs on the ecosystem (IATTC SAC 13-10, SAC 14-11).

2. Limited Understanding of Trophic Interactions: While considerable progress has been made in understanding the trophic structure of the pelagic food web in the EPO, there remains some uncertainty about how fishing impacts specific trophic levels, especially with regard to non-target species and lower trophic level organisms (e.g., squids, smaller pelagic species). As a result, some of the critical ecosystem functions may not be fully understood, which affects the certainty needed for achieving SG100 compliance

3. Need for Further Research on Ecological Traps: There is ongoing concern within the tuna purse seine fishery about the potential for the development of an "ecological trap" due to the extensive use of FADs. While there is no conclusive research on this issue within the EPO, the possibility of ecological traps introduces uncertainty, preventing full compliance with SG100. More research is needed to better understand the long-term ecological consequences of FAD use.

4. Need for providing all the collated data from IATTC observer program for the fleet under assessment.

4. Report details

4.1. Aims and constraints of the pre-assessment

The CAB notes that a pre-assessment does not attempt to duplicate a full assessment against the MSC Fisheries Standard. This preassessment complies with a group of members qualified but one more member (P1 and P3) should be needed to fulfil the team competences for a full assessment. Additionally, a full assessment includes public consultation stages and peer reviewers that are not included in a pre-assessment. It is important to note that a pre-assessment provides a provisional assessment based on a limited set of information. The sources of information consulted to prepare this report were the client and publicly available information sources.

No limitations were found during the drafting of this report.

4.2. Version details

The versions of the fisheries program documents used for this assessment are identified in **Table 4.2.1**.

Table 4.2.1: 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 Pre-Assessment Reporting Template	Version 3.4

5. Unit(s) of Assessment and Unit(s) of Certification

5.1. Unit(s) of Assessment

Kiwa has confirmed that the assessed fishery is within the scope of the MSC fisheries certification since:

- This is a wild-capture fishery.
- The fishery is not based on any introduced species.
- It does not target species classified as 'out-of-scope' (amphibians, reptiles, birds, mammals).
- The fishery does not make use of any kind of poisons or explosives.
- The assessed fishery takes place within international waters of the Eastern Pacific Ocean (FAO 77 & 87) and the Exclusive Economic Zones (EEZs) of the Countries indicated in **Table 5.1.1**. The fishery is not conducted under any controversial unilateral exemption to an international agreement and its management regime includes mechanisms for resolving disputes. Ecuador signed the International Commission for the Conservation of Atlantic Tunas (IATTC) in 2004 and ratified the convention in 2021.
- Ecuador is member of the International Labour Organization (ILO). The country has ratified 62 conventions, including 8 Fundamental Conventions (including the Forced Labour and the minimum age Conventions) and 3 Governance Conventions. The CAB is not aware that none of the fishing operators included in the UoA have been successfully prosecuted for a forced or child labour in the last 2 years.
- The CAB is not aware that the client does not include an entity that has been convicted for a shark finning violation in the last 2 years, as required in FCP 7.4.8.5. However, in the case the client decides to proceed to full assessment, the correspondent CAB shall check this issue with relevant stakeholders and compile evidence to confirm that no conviction which confirms guilt with respect to a violation of shark finning law has occurred in the last 2 years. The intent of this requirement is that it should apply to specific vessels or groups of vessels as defined under 7.24.7.1, which are implicated in the conviction with the legal entities, e.g. individuals or companies that have been convicted for shark finning offences.
- The fishery is an enhanced fishery and conforms to the scope criteria for enhanced fisheries (MSC FCP v2.3 7.4.2.12), see **Section 5.1.1** for more information; and
- The fishery is not an introduced species-based fishery (ISBF) (MSC FCP v2.3 7.4.2.13).

Finally, following the FCP v2.3, the client prior to announcing a fishery assessment, would be required to complete and submit a Scope Declaration using the 'MSC Scope Declaration Template', to confirm that the UoA meets the scope requirements in 7.4.8 including some of the statements abovementioned and MSC's labour policy.

Besides, Kiwa has checked that:

- There are no catches of non-target species that are inseparable or practically inseparable (IPI) from target stock.
- The fishery has not previously failed an assessment and has no certificate withdrawn.
- At the time of preparing this preassessment, there are several MSC fisheries, some under assessment, in the Pacific with different P1 target stocks. See **Section 8.2** for details on the harmonisation needs.

Table 5.1.1: Unit(s) of Assessment (UoA)

UoA 1	**Description**
Target Stock	Skipjack tuna *(Katsuwonus pelamis)* – EPO stock – Eastern Pacific Ocean
Geographical area	Exclusive Economic Zone of Ecuador, Colombia, Panamá, Perú, and Costa Rica and the High seas of FAO 77 & 87.
Fishing gear type(s) and, if relevant, vessel type(s)	Purse seine (dolphin-associated, unassociated and FADs)
Client group	5 vessels: Belouve, Ria de Aldan, Doña Roge, Belle Rive & Belle Isle
Other eligible fishers	No other eligible fishers have been considered.
Justification for choosing the Unit of Assessment	Client's decision.
UoA 2	**Description**
Target Stock	Yellowfin tuna *(Thunnus albacares)*
Geographical area	Exclusive Economic Zone of Ecuador, Colombia, Panamá, Perú and Costa Rica and the High seas of FAO 77 & 87
Fishing gear type(s) and, if relevant, vessel type(s)	Purse seine (dolphin-associated, unassociated and FADs)
Client group	5 vessels: Belouve, Ria de Aldan, Doña Roge, Belle Rive & Belle Isle
Other eligible fishers	No other eligible fishers have been considered.
Justification for choosing the Unit of Assessment	Client's decision.
UoA 3	**Description**
Target Stock	Bigeye tuna ***(****Thunnus obesus)* **–** EPO stock – Eastern Pacific Ocean
Geographical area	Exclusive Economic Zone of Ecuador, Colombia, Panamá, Perú and Costa Rica and the High seas of FAO 77 & 87
Fishing gear type(s) and, if relevant, vessel type(s)	Purse seine (dolphin-associated, unassociated and FADs)
Client group	5 vessels: Belouve, Ria de Aldan, Doña Roge, Belle Rive & Belle Isle
Other eligible fishers	No other eligible fishers have been considered.
Justification for choosing the Unit of Assessment	Client's decision.

5.1.1. Scope in relation to enhanced or introduced fisheries

The UoAs include Fishing Aggregation Device (FAD) set types, which are categorized as fishery enhancement tools. A FAD is defined as a device designed to attract fish, typically a floating structure that can be constructed using various materials. Fishing near or beneath FADs leverages the natural tendency of tuna and other pelagic species to gather around floating objects in open water, making it significantly more efficient compared to targeting unassociated schools. The eligibility criteria for considering an enhanced fishery for MSC assessment are outlined in **Table 5.1.1.**. It is important to note that an enhanced fishery can only qualify for assessment if it meets all the specified scope requirements.

Table 5.1.1.2. MSC scope criteria for enhanced fisheries. Red text indicates whether these are met by the UoAs (specifically the FAD set-types)

A	**Linkages to and maintenance of a wild stock**
i	At some point in the production process, the system relies upon the capture of fish from the wild environment. Such fish may be taken at any stage of the life cycle including eggs, larvae, juveniles or adults. The 'wild environment' in this context includes marine, freshwater and any other aquatic ecosystems. Met – the fishery takes place in the Eastern Pacific Ocean
ii	The species are native to the geographic region of the fishery and the natural production areas from which the fishery's catch originates unless MSC has accepted a variation request to include introduced species for the pilot phase. Met – All species (P1 and P2) are native to the area of the fishery.
iii	There are natural reproductive components of the stock from which the fishery's catch originates that maintain themselves without having to be restocked every year. Met – All target stocks are maintained by natural recruitment
iv	Where fish stocking is used in hatch-and-catch (HAC) systems, such stocking does not form a major part of a current rebuilding plan for depleted stocks. Note: This requirement shall apply to the "current" status of the fishery. Wild stocks shall be managed by other conventional means. If rebuilding has been done by stocking in the past, it shall not result in an out-of-scope determination as long as other measures are now in place. - Not relevant this is not a HAC fishery
B	**Feeding and Husbandry**
i	The production system operates without substantial augmentation of food supply. In HAC systems, any feeding is used only to grow the animals to a small size prior to release (not more than 10% of the average adult maximum weight), such that most of the total growth (not less than 90%) is achieved during the wild phase. In catch-and-grow (CAG) systems, feeding during the captive phase is only by natural means (e.g., filter feeding in mussels), or at a level and duration that provide only for the maintenance of condition (e.g., crustacean in holding tanks) rather than to achieve growth. – Met there is no augmentation of food supply, this fishery is not a CAG or HAC fishery.
ii	In CAG systems, production during the captive phase does not routinely require disease prevention involving chemicals or compounds with medicinal prophylactic properties. –Not relevant this is not a CAG fishery
C	**Habitat and ecosystem impacts**
i	Any modifications to the habitat of the stock are reversible and do not cause serious or irreversible harm to the natural ecosystem's structure and function. Note: Habitat modifications that are not reversible, are already in place and are not created specifically for the fishery shall be in scope. This includes: Large-scale artificial reefs. Structures associated with enhancement activities that do not cause irreversible harm to the natural FADs enhance fishing operations by aggregating fish to more efficiently capture them. These aggregating effects disappear when the FADs are removed. The UoAs therefore meet this scope requirement.

Kiwa confirms that the fishery being evaluated qualifies as an enhanced fishery, as it fully satisfies the scope criteria for habitat modifications: “Any modifications to the habitat of the stock are reversible and do not result in serious or irreversible harm to the natural ecosystem’s structure and function.”

When a fishery includes enhanced components that are not explicitly addressed in MSC Fisheries Standard Annexes SB (bivalves) or SC (salmon), the CAB must review and, if necessary, adjust the default assessment tree, considering the performance indicators (PIs) needed to evaluate the enhancements. In this case, the team concluded that no changes to the default assessment tree were required. This determination was based on the following reasons:

- FADs are employed to attract the target species, but all removals of the target stock are fully accounted for in stock assessments, meaning impacts are appropriately evaluated under Principle 1 of the default assessment tree.
- There is no clear empirical evidence to suggest that FADs function as an "ecological trap" that fundamentally disrupts tuna biology (as explained in the rationale for performance indicator 2.5.1).
- Risks associated with lost, abandoned, or discarded FADs causing habitat damage are adequately addressed in the scoring of the Habitats Component (2.4).

As a result, the stock-level and ecosystem impacts associated with the enhanced fishery elements are effectively captured within the default assessment tree for Principles 1 and 2. Consequently, no adjustments to the default tree were made.

5.2. Vessels list(s)

Table 5.2.1. List of fishing companies and vessels included in UoA. Source: table elaborated by the team with information provided by the client.

Vessel name	Fishing company	Flag State	IMO	Length overall (m)	Gross Tonnage (t)
Belouve	BELOUVE S.A.S	Ecuador	9653848	89,4	1 386
Ria de Aldan	ALDAN PACIFIC S.A.S	Ecuador	9476238	89,4	1 386
Doña Roge	PESQUERA DOÑAROGE S.A	Ecuador	7005279	56,97	780
Belle Rive	PESQUERA FINISTERRE S.A.	Ecuador	9679622	90	1 386
Belle Isle	PESQUERA FINISTERRE S.A.	Ecuador	9679634	90	1 386

5.3. Fishery overview

The fleet uses purse seine to target yellowfin and skipjack tuna and, in less proportion, bigeye tuna.

Purse seine fishing is undertaken by small scale artisanal fishers up to industrial fleets and is most used to target aggregated pelagic schools in the upper levels of the water column, though the depth of target can range significantly. Purse seine fishing gear encloses a school of fish with a curtain of netting, which hangs from a float line, or cork line (**Figure 5.3.1**).

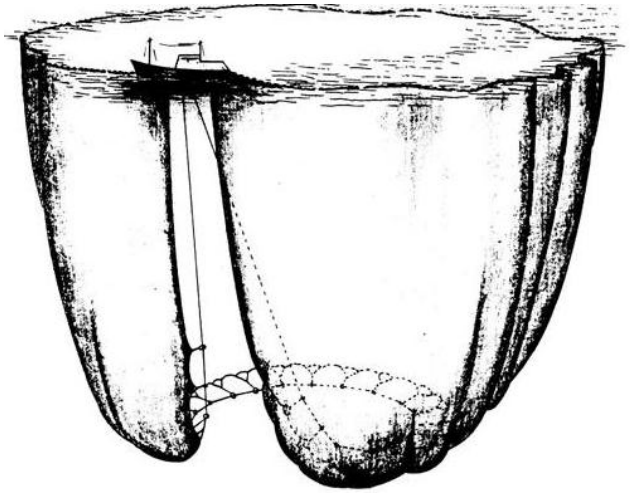


Figure 5.3.1. Diagram of a Purse Seine net deployed through the water column. Reproduced from http://www.fao.org/fishery/geartype/249/en

The IATTC classifies fishing vessels based on their tonnage and fishing capacity, not directly on whether they fish for tuna associated with dolphins. However, vessels that engage in dolphin setting (fishing for tuna by locating dolphin schools) are subject to specific regulations to protect dolphin populations.

Categories of IATTC Vessels:

- **Category 1**: Very large vessels, with a tonnage greater than 1,396 tons.
- **Category 2**: Large vessels, with a tonnage typically ranging from 363 to 1,396 tons.
- **Category 3**: Medium-sized vessels, with a tonnage between 363 and 1,396 tons.
- **Category 4**: Smaller vessels, but still capable of operating with industrial techniques, with a tonnage typically less than 363 tons.
- **Category 5**: Vessels that are smaller than those in Category 4, typically artisanal or small-scale vessels.
- **Category 6**: Small vessels, typically artisanal or lower-capacity fishing vessels.

The vessel classification is based on tonnage rather than the type of fishing method, but dolphin setting is heavily regulated by the AIDCP (Agreement on the International Dolphin Conservation Program). This program includes measures for monitoring dolphin mortality and mandates the use of dolphin-friendly fishing practices.

The dolphin sets in tuna fisheries within the IATTC Convention Area refer to a fishing method where purse seine nets are deliberately set around dolphin pods to capture schools of mostly yellowfin tuna that often swim beneath them.

The IATTC oversees measures to mitigate the impact of this method, primarily through the AIDCP as mentioned above. This includes stringent monitoring, the use of dolphin safety panels, and training for fishers to release dolphins safely.

All vessels, regardless of category, involved in dolphin-associated tuna fishing must comply with IATTC and AIDCP regulations to minimize dolphin bycatch, and are subject to monitoring to ensure compliance with conservation efforts.

6. Traceability

6.1. Traceability - initial review and planning

Due to the lack of comprehensive information provided by the client, we have outlined a standard traceability workflow for a tuna purse seine vessel operating in the same area. In this description, it is assumed that IATTC regulations on traceability are being adhered to.

Vessel Details: Include the vessel’s name, country of registration, registration number, and international radio call sign.

Trip Information: Provide details such as the port or place of departure, date of departure, port or place of unloading, and date of arrival at the port.

Activity Reporting: Document activities for each set and for days when no sets were made, covering the entire duration of the trip. Activities should specify:

6.2. "A set"
6.3. "Day searched, but no sets made"
6.4. "No fishing — in transit"
6.5. "No fishing — gear breakdown"
6.6. "No fishing — bad weather"
6.7. "No fishing — in port"

Set Details: Record the date and time of the start and end of each set.

Position of Set: Indicate the specific location of each set.

School Association: Specify the type of school association.

Catch Data: Report the weight of fish caught per set, categorized by species.

All logbooks must be maintained electronically and transmitted to the flag State on a regular basis. Vessels are required to submit a port entry notification at least 24 hours before arriving at the port for landing. Upon completing the landing, vessels must report the exact quantity landed in the Port Discharge Report. These requirements are stipulated under the legislation of each country, which mandates a 24-hour reporting period.

All UoC vessels are equipped with a Vessel Monitoring System (VMS). Additionally, vessels must send a port entry notification to the authorities at least 48 hours prior to arrival. Following the notification, authorities will review the vessel's documentation and grant approval once all requirements are verified.

Upon arrival at the port, officials from Ecuador's Subsecretaría de Recursos Pesqueros (SRP) inspect the vessel. They verify the vessel's permits with the captain, check the wells, and grant authorization for the vessel to enter the port for unloading. The frozen tuna is then transported to processing plants, where it is sorted, processed, and sold.

- Fishing Operations and Onboard Handling

After each fishing set, the catch is brought aboard the vessel and transferred directly to the fish well tanks containing cold brine water. This ensures rapid cooling and freezing. The vessel's logbook meticulously records the well numbers, quantities, and species for each set. No processing occurs onboard. Once stored in the hold, the fish remain untouched until unloading or processing. The hold is sealed when full, with temperature monitoring as the only ongoing control.

Upon port arrival, fish are manually unloaded and sorted by size at the processing plants. A single fish well or tank may contain fish from different set types or fishing areas.

- Unloading and Processing

All catch is offloaded exclusively at the port of Manta, Ecuador, which is the sole landing site. No transshipment takes place; tuna is unloaded directly from the vessel to processing plants within Ecuador. Although mixed species may occur, the fishery client ensures traceability through logbook records, documenting species, location, date, and well allocation. This robust tracking system guarantees accurate identification of species stored in wells.

Traceability is further reinforced through measures such as well segregation, double netting, and 100% observer coverage, effectively preventing species mixing. Ownership of the catch is transferred at the port during unloading, prior to transportation to the processing plants. The fish are then loaded into 20-foot containers for delivery to processing facilities.

- Fishing Areas and Compliance

Fishing operations occur within the Ecuadorian, Panamanian, Peruvian, Costa Rica and Colombian Exclusive Economic Zones (EEZ) and adjacent high seas. The fishery client evaluates these designated fishing areas, which are authorized under specific permits. Any fishing outside these areas without proper permits is deemed illegal.

- MSC Certification and Eligibility

Product eligibility for Marine Stewardship Council (MSC) certification is contingent on adherence to stringent controls. This includes:

- Verifying catch locations within MSC-certified areas using VMS and logbook data.
- Ensuring compliance by vessels listed in **Table 5.2.1**.

The assessment team concludes that products meeting these defined criteria should be eligible to carry the MSC ecolabel, subject to a successful certification assessment.

Table 6.1.1: Traceability initial planning

The proposed point of change of ownership of product to any party not covered by the fishery assessment
The proposed point of change of ownership occurs at the port when the fish is unloaded and ownership is transferred from the vessel to the processing plant. As this point happens before the fish enters the processing plant, and if the party receiving the product is not covered by the fishery assessment, additional traceability measures may be needed to ensure that the transition is properly documented. The first sale typically occurs once the fish is unloaded and delivered to the processing plant. If there are transactions between members of the client group prior to the sale, these would need to be documented to ensure full traceability. The trading process should be transparent, and records of these transactions should be available, particularly if they involve parties not covered by the fishery assessment.
The proposed point from which subsequent Chain of Custody (CoC) is required
The CoC is required from the point of unloading at the processing plant, where the fish is handled and prepared for sale. This ensures that any party involved in further distribution, whether within the processing facility or outside, adheres to traceability standards. It is important to confirm whether CoC requirements apply before the first sale to non-assessed parties, and if so, when the responsibilities shift to these parties.
The plan for reviewing traceability at the initial assessment site visit
If the fishery decides to go for full assessment, during the initial assessment site visit, the focus will be on collecting data related to the catch logs, processing records, and ownership transfer documentation. Key personnel to consult include the vessel captain, port authorities, and processing plant managers. These individuals can provide the necessary documentation to confirm compliance with traceability requirements, including logs for each set, species caught, and the movement of the product from the vessel to the processing facility.

6.2. Traceability within the fishery

Table 6.2.1: Traceability within the fishery

Statement on fishery's ability to track and trace to each Unit of Assessment
Systems allow the fishery client to track to trace any fish or fish products back to each individual UoA
Movement of fish and fish product between **harvest** and **landing**

An illustration of movement of product between harvest and landing. Include when any of the following happen: Harvesting, At-Sea processing, Translocation, Transhipment, Offloading, Landing.
Fishing Vessel → Offloading → Landing Tuna is caught on the purse seine vessel and then offloaded directly to the landing.
Movement of fish and fish products between **landing** and the proposed **start of the CoC** if relevant *An illustration of movement of product between landing and the proposed start of CoC. Include when any of the following is happening: Transport, Storage, Sorting/ Grading, Packing, Auction.*
Landing → Transport → Storage → Sale by client group company. Fish is unloaded, transported to cold storage, then sorted and/or graded, and eventually sold by the client group company. CoC is established at or before the landing, depending on regulatory and traceability requirements
Description of any processing and sorting/ grading prior to change of ownership
Before the change of ownership, the fish may undergo sorting, grading, and packaging. These processes are critical to ensure segregation based on species and other UoA-related data. Key data elements like species and catch area are recorded and associated with each batch to ensure traceability to the correct UoA.
For the critical tracking events (i.e. where in the product flow this data needs to be transferred) of all fish and fish product handling and sale not covered by the proposed CoC describe: - Process of segregating to each Unit of Assessment - Key data elements (i.e. the data or documents to identify the UoA such as species, catch area, gear)
For all fish handling and sale, critical tracking events ensure the accurate transfer of data: • **Segregation Process:** Fish from each UoA is segregated during processing, ensuring clear identification through tagging or separate storage areas. • **Key Data Elements:** These include species, catch area, and other relevant identifiers such as vessel name and registration number, all of which are essential for maintaining traceability.
Where there are IPI stock(s) within the scope of certification, describe the verification of traceability systems
For IPI stocks, which cannot be segregated from P1 stocks, traceability systems manage this by tracking these stocks through similar critical tracking events. While segregation may not be physically possible, all data related to the catch of IPI stocks is recorded and linked to the appropriate UoA.
Other relevant information on the systems to track and trace to each UoA
Relevant regulatory controls, such as observer coverage, vessel monitoring systems (VMS), and adherence to IATTC regulations, provide robust oversight of traceability. These measures ensure that each fish or product can be traced to its respective UoA, with data cross-checked against vessel logs, observer reports, and port landing records.

Do systems allow the fishery client to trace any fish or fish products back to the individual UoA? If yes, describe	Yes, the systems in place for this tuna purse seine fishery allow the fishery client to trace fish or fish products back to the individual UoA. This is achieved through a combination of detailed catch records, observer reports, and vessel monitoring systems (VMS). Each fishing set and the associated catch are logged with key data elements such as species and fishing area, which are tied to specific UoAs. The traceability systems have to ensure that every batch of fish can be linked to a particular UoA in the Eastern Pacific Ocean (EPO) region. This includes tracking fish from the moment of capture on

	the vessel to its unloading, processing, and eventual sale. Moreover, the use of observer coverage and adherence to IATTC regulations further supports the traceability of fish to its respective UoA. These systems, coupled with regulatory oversight and proper documentation, ensure the integrity and traceability of the products throughout the supply chain.
Do systems allow the fishery client to trace any fish or fish products back to the individual UoA and how do they do this? If yes, describe	Yes, the systems in place allow the fishery client to trace fish or fish products back to the individual Unit of Assessment (UoA) through several methods: 1. Catch Logs: Detailed records of each fishing set, including species, location, and gear used, are tied to a specific UoA. 2. Vessel Monitoring Systems (VMS): These track vessel movements and ensure the fish are caught in designated areas corresponding to the UoA. 3. Observer Coverage: Onboard observers verify catch data, confirming the UoA and species. 4. Port Documentation: Landing records tie the fish back to the UoA through species and quantity logs. 5. Processing Plant Sorting: Fish are tagged or assigned to a UoA during sorting and grading. These systems ensure traceability from catch to sale, complying with regulatory standards.
Does transhipment occur within the fishery?	No
What is the type of transhipment and what the systems to track and trace to UoA? (high seas/in port/ other) If yes: • How and when does this occur? • What systems allow to track and trace to UoA?	NA.
For high seas transhipment are the systems to support tracking and tracing to UoA verified independent from the certificate holder? If yes, describe	No high seas transhipment
For high seas transhipment do the systems to verify tracking and tracing to UoA cover both fishing and receiving vessels? If yes, describe	No high seas transhipment
For high seas transhipment do the systems to track and trace to UoA apply to 100% of transhipment events? If yes, describe	No high seas transhipment

6.3. Traceability risks and mitigations

Table 6.3.1: Traceability risks and mitigation within the fishery

Factor	**Description of the traceability risk factors and details of the risk mitigation and management** *Include in each description:* • *Whether each factor occurs* • *When it occurs and how frequently (e.g. regularly, seasonally, rarely)* • *How any potential traceability risks are mitigated and any risk management* • *If covered by information provided elsewhere in the pre-assessment report, cross reference as needed.*
Will the fishery use gears that are not part of the UoA? If Yes, include in the description: • If this may occur on the same trip, on the same vessels, or during the same season; • How any risks are mitigated.	No, the fishery does not use gears that are not part of the UoA. The fishery employs purse seine gear, which is the method covered by the UoA in the EPO region. This ensures that all catch is within the scope of the certification.
Will vessels in the UoA also fish outside the UoA geographic area? If Yes, include in the description: • If this may occur on the same trip; • How any risks are mitigated.	Yes, vessels in the UoA may fish outside the UoA geographic area. This can occur on the same trip if vessels enter adjacent zones for different fishing opportunities. **Risk Mitigation**: 1. **Segregation of Catches**: Fish caught outside the UoA will be clearly documented and segregated from UoA catch to prevent mixing. 2. **Traceability Systems**: Detailed records and vessel monitoring systems (VMS) will ensure that any fish caught outside the UoA is traceable and properly identified. 3. **Observer Coverage**: Independent observers will verify that catches from outside the UoA are separated and documented according to regulations.
Do client group members ever handle certified and non-certified products during any of the activities covered by the UoA? This refers to both at-sea activities and on-land activities and should reflect those listed in product movement in Table 4. It includes: • Translocation • Transhipment • Transport • Storage • Processing • Sorting/ grading • Packing • Landing • Auction If yes please describe how any risks are mitigated.	No, client group members do not handle certified and non-certified products together during activities covered by the UoA. The fishery ensures full segregation between certified and non-certified products throughout the handling and processing stages. **Risk Mitigation**: 1. **Segregation at Landing and Processing**: Certified and non-certified products are separated at landing and during sorting or grading. 2. **Traceability Systems**: Documentation and labeling at every step ensure that certified products are clearly identified and separated from non-certified products. 3. **Independent Monitoring**: Observer coverage and internal audits ensure compliance with the segregation process, preventing any cross-contamination between certified and non-certified products

Factor	**Description of the traceability risk factors and details of the risk mitigation and management** *Include in each description:* • *Whether each factor occurs* • *When it occurs and how frequently (e.g. regularly, seasonally, rarely)* • *How any potential traceability risks are mitigated and any risk management* • *If covered by information provided elsewhere in the pre-assessment report, cross reference as needed.*
Does transhipment occur within the fishery? If Yes, please describe: • If transhipment takes place at-sea, in port, or both; • If the transhipment vessel may handle product from outside the UoA; How any risks are mitigated.	No
Are there any other risks of mixing or substitution between the UoA and other non-certified product? If yes, please describe how any risks are mitigated.	Yes, there are potential risks of mixing or substitution between the UoA and other non-certified products, particularly during handling, processing, or transportation stages. These risks can arise if certified and non-certified products are not properly segregated or documented. **Risk Mitigation**: 1. **Clear Segregation**: Certified and non-certified products are kept separate throughout the process. At landing, fish from different sources (certified vs. non-certified) are immediately separated, and each batch is tagged and tracked using dedicated labeling and logbooks. 2. **Traceability and Documentation**: Detailed records are kept at every step, from catch to landing and processing. This includes species, fishing area, gear type, and the specific UoA associated with each batch. This ensures that products are traceable and that any non-certified catch is clearly documented. 3. **Independent Observer Coverage**: Observers are deployed on vessels to verify and monitor the catch and ensure proper segregation. Their reports are used to cross-check data and maintain the integrity of the traceability system. 4. **Regular Audits**: Periodic audits and checks, both internally and by external certifiers, ensure that segregation protocols are strictly followed, minimizing the risk of mixing or substitution.
Are there any other risks of mixing between different UoAs? Please describe how any risks are mitigated.	Yes, there are risks of mixing between different UoAs, especially during handling, sorting, and processing stages. **Mitigation Measures**: 1. **Segregation**: Fish from different UoAs are kept separate immediately after capture and at landing. 2. **Traceability**: Detailed logbooks and vessel monitoring systems (VMS) track each fish by UoA, ensuring accurate segregation. 3. **Observer Coverage**: Observers verify the correct separation of catches from different UoAs, with their reports ensuring compliance. 4. **Post-Landing Procedures**: Sorting and processing are done carefully, and fish are labeled according to their UoA to prevent any mixing.

7. Pre-assessment results

7.2. Pre-assessment results overview

7.2.1. Overview

Gaps for principle 2:

- Provide detailed information on FAD deployment: It is essential that the fishery provides more detailed and reliable information regarding the number of FADs deployed, their location, and their characteristics. This data should include details on the specific FADs being used by the fleet, including the frequency of deployment, the types of FADs (e.g., anchored or drifting), and their distribution across the fishing grounds. Moreover, a recovery strategy for lost or derelict FADs should be clearly outlined to mitigate potential impacts on vulnerable habitats like coral reefs. This information will be critical for fully understanding the ecological risks of FAD use and for demonstrating compliance with MSC's SG80 criteria.
- Strengthen data collection and reporting mechanisms: In order to enhance the transparency and accuracy of monitoring efforts, more comprehensive and systematic data needs to be collected. Specifically, data from logbooks, Vessel Monitoring Systems (VMS), and observer programs should be made available and analyzed. These data sources can provide a more complete picture of the fishing activities, including fleet dynamics, fishing locations, and interactions with non-target species and sensitive habitats. It is important to ensure that the data is consistently collected from all vessels included in the certification scope. Comprehensive reporting will allow for more robust analysis of potential impacts and trends within the fishery, contributing to better decision-making and adaptive management.
- Enhance observer coverage across the fleet: Increasing observer data provided across all vessels involved in the fishery is essential for ensuring comprehensive monitoring of bycatch, interactions with endangered species, and the effectiveness of mitigation measures. This includes ensuring that all vessels within the client group are subject to observer programs and provide accurate data on species caught, fishing methods used, and any habitat impacts.

These recommendations aim to fill the current gaps in information and improve the overall effectiveness of ecosystem-based management in fishery. By addressing these areas, the fishery can enhance its sustainability performance and progress toward meeting the MSC's SG80 standards.

7.2.2. Recommendations

Kiwa points out that a pre-assessment is not intended to duplicate a full assessment against the MSC Fisheries Standard. A full assessment involves a team that complies with the qualifications and competency requirements set out in the GCR, peer reviewers and public consultation stages that are not included in a pre-assessment. The list of key stakeholders that should be consulted during a full assessment is provided in **Section 8.1**. Stakeholder participation is encouraged. Therefore, it is important that the client cooperates to encourage key stakeholders to participate in the assessment process. The client should consider the communication strategy to be followed, in order to explain the MSC assessment process and the implications (including costs and benefits) of certification.

In addition, as stated in Section 5.1, the UoAs may include other eligible entities (e.g. first point of sale and agents) to share the certificate, before proceeding to the full assessment the client must be aware of the FCP 7.5.10 requirements.

Prior to proceeding to define the UoA and UoC in the full assessment process, the client must complete and submit to the CAB the 'MSC Client Document Checklist' and comply with the applicable MSC Labour Eligibility Requirements. The client must also complete the 'MSC Scope Declaration Template' form before the fishery is announced. Therefore, before going into the assessment, it is advisable that those responsible for the MSC certification process in the client group review these documents in detail to understand the types and extent of data and information that will need to be made available to them.

It is also important to note that the CAB should confirm that the client or client group does not include any entity that has been convicted of a shark finning violation within the last 2 years (FCP 7.4.8.5). To do so, the CAB should check with the relevant management authorities and collect any other relevant data.

All announcements of the full assessment are made on the MSC website, normally at least 30 days in advance.

7.3. Summary of potential conditions by Principle

Table 7.3.1: Summary of Principle level scores

Principle of the Fisheries Standard	Number of PIs with draft scoring ranges <60
Principle 1 – Stock status	0
Principle 2 – Minimising environmental impacts	0
Principle 3 – Effective management	0

7.4. Summary of Performance Indicator level scores

The team has completed the summary of Performance Indicator level scores in **Table 7.4.1**. The full scoring sections were also completed (**Sections 7.5.4, 7.5.2 & 7.5.3**).

When scoring the draft scoring ranges, the CAB used the following key to determine the result:

- Information suggests fishery is not likely to meet the SG60 for any scoring issue (Fail <60).
- Information suggests fishery will reach SG60 but may not meet all scoring issues at SG80, a condition may be needed (Pass with condition 60 – 79).
- Information suggests fishery is likely to exceed SG80 resulting in an unconditional pass for this Performance Indicator. Fishery may meet one or more scoring issues at SG100 level (Pass ≥80).

Table 7.4.1 Summary of the Performance Indicators scoring ranges.

Principle	Component	Performance Indicator (PI)		UoA1 -SKJ-	UoA2 -YFT-	UoA3 - BET -
One	Outcome	1.1.1	Stock status	≥80	≥80	≥80
		1.1.2	Stock rebuilding	N/A	N/A	N/A
	Management	1.2.1	Harvest strategy	≥80	≥80	60-79
		1.2.2	Harvest control rules & tools	60-79	≥80	≥80
		1.2.3	Information & monitoring	≥80	≥80	≥80
		1.2.4	Assessment of stock status	≥80	≥80	≥80
Two	Primary species	2.1.1	Outcome	≥80	≥80	≥80
		2.1.2	Management strategy	≥80	≥80	≥80
		2.1.3	Information/Monitoring	≥80	≥80	≥80
	Secondary species	2.2.1	Outcome	≥80	≥80	≥80
		2.2.2	Management strategy	≥80	≥80	≥80
		2.2.3	Information/Monitoring	≥80	≥80	≥80
	ETP species	2.3.1	Outcome	60-79	60-79	60-79
		2.3.2	Management strategy	≥80	≥80	≥80

		2.3.3	Information strategy	≥80	≥80	≥80
	Habitats	2.4.1	Outcome	60-79	60-79	60-79
		2.4.2	Management strategy	60-79	60-79	60-79
		2.4.3	Information	60-79	60-79	60-79
	Ecosystem	2.5.1	Outcome	≥80	≥80	≥80
		2.5.2	Management	≥80	≥80	≥80
		2.5.3	Information	≥80	≥80	≥80
Three	Governance and policy	3.1.1	Legal &/or customary framework	≥80	≥80	≥80
		3.1.2	Consultation, roles & responsibilities	≥80	≥80	≥80
		3.1.3	Long term objectives	≥80	≥80	≥80
	Fishery specific management system	3.2.1	Fishery specific objectives	≥80	≥80	≥80
		3.2.2	Decision making processes	≥80	≥80	≥80
		3.2.3	Compliance & enforcement	60-79	60-79	60-79
		3.2.4	Monitoring & management performance evaluation	≥80	≥80	≥80

Table 7.4.2: Summary of Performance Indicator level scores

Performance Indicator	**Draft scoring range**	**Data deficient?**
1.1.1 – Stock status – SKJ (UoA1)	≥80	No
Rationale or key points		
There is a high degree of certainty that the stock is above the PRI and there would be a high degree of certainty that the stock has been above a level consistent with MSY over recent years.		
Performance Indicator	**Draft scoring range**	**Data deficient?**
1.1.2 – Stock rebuilding – SKJ (UoA1)	<60 / 60 – 79 / ≥80	Yes / No
Rationale or key points		
N/A		
Performance Indicator	**Draft scoring range**	**Data deficient?**
1.2.1 – Harvest Strategy – SKJ (UoA1)	≥80	No
Rationale or key points		
The harvest strategy uses an HCR designed to keep F from exceeding “the best estimate of the rate corresponding to the maximum sustainable yield (FMSY) for the species that requires the strictest management” (IATTC, 2016). For SKJ the strategy worked while the effort control was based only on the application of season closures depending on the status of YFT and BET. The IATTC regularly conducts either full “benchmark” stock assessments or updates that are used to inform the HCR and management advice is provided to meet the goal set by the Convention. The harvest strategy can be viewed as having worked effectively for many years as the stock has been shown to be around the biomass producing MSY at least for the last two generations. The control rule is evolving from a simple form to a probabilistic specification while the main control tool is to reduce effort by reducing the length of the fishing season IATTC has reviewed, evaluated and adjusted the harvest strategy until it reached its current structure. Resolution C-16-02 provides a comprehensive roadmap for the evaluation of the harvest control rule for tropical tunas (yellowfin, bigeye and skipjack).		
Performance Indicator	**Draft scoring range**	**Data deficient?**

1.2.2 – Harvest control rules and tools – SKJ (UoA1)	60 – 79	No
Rationale or key points		
The IATTC's decision to adopt the rule is evidence that the HCR is in now formally in place as required at SG80. Additional evidence that the HCR is functional is its systematic use and implementation through temporal closures. In recent years, the Commission has adopted the staff recommendations, therefore, based on evidence of implementation, the HCR and its main associated tool can therefore be said to be in place as required at SG80 and are linked to reference points in a manner consistent with the harvest strategy. The evidence indicates that the construction and application of the HCR rule for SKJ has been improving to incorporate a wider range of uncertainties and to evaluate their impact on alternative courses of action. However, the uncertainty and risk caused by the recent increase in the number of sets on objects has not been addressed fully and represents a vulnerability to the performance of the HCR for SKJ. It should be noted that this rationale also reflects the agreement and conclusion of harmonization talks with other CABs regarding the issue discussed above. Therefore, it is considered that the HCR may not yet be robust to the main uncertainties and SG80 is not met. A binding condition should be opened aligned with the overlapping fisheries (see **Table 8.2.4**). The tools to implement the HCR are set out in Resolutions. There is provision for review and adjustment according to outcome. On that basis, the available evidence indicates that the tools are likely to be effective controlling exploitation rates. SG60 and SG80 are met.		
Performance Indicator	**Draft scoring range**	**Data deficient?**
1.2.3 – Information and monitoring – SKJ (UoA1)	≥80	No
Rationale or key points		
Sufficient information (on stock structure, stock productivity, fleet composition), is available to monitor and assess stock status including reporting and size-frequency sampling by each fleet and catch-per-unit-effort data from these fleets. There is a long history of biological and environmental research on EPO tuna stocks, and considerable environmental information that is not explicitly used in the harvest strategy. There has been an IATTC observer program since 1993 for larger vessels. Catches are reasonably well monitored and are sufficient for stock assessment. The level of monitoring is sufficient for the harvest strategy		
Performance Indicator	**Draft scoring range**	**Data deficient?**
1.2.4 – Assessment of stock status – SKJ (UoA1)	≥80	No
Rationale or key points		
A full benchmark stock assessment was conducted (Bi et al. 2024) representing a significant improvement from the interim assessment reported in 2022 and included new methods and data (Maunder et al. 2022). No risk assessment was conducted, therefore, the reference model was assumed to represent the most plausible set of assumptions about the state of nature. The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated. The stock assessment estimates parameters accounting for different types of uncertainties that have been identified in the biology, fishery and model specification. Stock status is presented as the probability of being beyond the IATTC's reference points. To ensure that management choices meet the requirements of the HCR as described in Resolution C-16-02 (IATTC 2016), the results of the stock assessment are presented in probabilistic terms so that the HCR can be evaluated. The IATTC's stock assessments are regularly reviewed internally by the Scientific Advisory Committee (SAC), The interim skipjack tuna stock assessment (Maunder et al., 2022) was externally reviewed in November 2022 (Bence et al., 2022).		

Performance Indicator	Draft scoring range	Data deficient?
1.1.1 – Stock status – YFT (UoA2)	≥80	No
Rationale or key points		
In 2020, a benchmark assessment was conducted that served as basis for a risk analysis (IATTC Fishery Status 2020). The analysis included 48 models, covering a wide range of plausible hypotheses about biology as well as different data sets and assumptions. Based on the 36 models (excluding h=1.0 as implausible), it can be found that 4 have a current (median) status below the model's PRI, which translates into around 11%. So, it is possible to interpret that biomass is being greater than 80% probability ("highly likely") above its PRI, so SG60 and SG80 are met, but SG100 is not met. Even considering some of these models are implausible, the stock is likely to be above a level consistent with MSY.		
Performance Indicator	**Draft scoring range**	**Data deficient?**
1.1.2 – Stock rebuilding – YFT (UoA2)	<60 / 60 – 79 / ≥80	Yes / No
Rationale or key points		
N/A		
Performance Indicator	**Draft scoring range**	**Data deficient?**
1.2.1 – Harvest Strategy – YFT (UoA2)	≥80	No
Rationale or key points		
With the IATTC elements indicated bellow: • Data collection programme through Resolution C-03-05. • Stock assessment and the provision of advice. • Resolution C-21-04 on the conservation of tropical tuna in the IATTC area. It can be concluded that the harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80. There is therefore evidence that the harvest strategy is achieving its objectives. Monitoring is in place. Data are collected to estimate management quantities, which indicates whether the harvest strategy is working or not.		
Performance Indicator	**Draft scoring range**	**Data deficient?**
1.2.2 – Harvest control rules and tools – YFT (UoA2)	≥80	No
Rationale or key points		
The HCR for EPO tropical tunas is set out in Res. C-16-02. Although there is a well-defined HCR, its application to yellowfin and bigeye was suspended 2018-2019 due to the lack of appropriate indicators produced from stock assessments. Indeed, the status quo has been maintained with a roll-over of the 2017 resolution (C-17-02 to C-20-06). Considering that the current HCR approach is precautionary and it is expected to keep the stock fluctuating around or above MSY and to reduce exploitation as the stock approaches its PRI. In 2020, stock assessments were updated successfully, and a risk assessment was triggered that provided parameters suitable for the HCR and conducted a decision analysis to guide decision-making under risk. The HCR was applied with a robust risk-based approach, and together with MSE testing, this indicates that main uncertainties are being addressed		
Performance Indicator	**Draft scoring range**	**Data deficient?**
1.2.3 – Information and monitoring – YFT (UoA2)	≥80	No
Rationale or key points		

Sufficient information (on stock structure, stock productivity, fleet composition), is available to monitor and assess stock status including reporting and size-frequency sampling by each fleet and catch-per-unit-effort data from these fleets. There is a long history of biological and environmental research on EPO tuna stocks, and considerable environmental information that is not explicitly used in the harvest strategy.

Stock abundance and fishery removals through both Electronic Monitoring (EM) systems and observer data are regularly monitored at a level of accuracy and coverage consistent with the HCR, and indicators of catch and effort are available and monitored with sufficient frequency to support the HCR, including annual updates of the stock assessment. In addition, there is observer data which provides discard estimates

Performance Indicator	Draft scoring range	Data deficient?
1.2.4 – Assessment of stock status – YFT (UoA2)	≥80	No

Rationale or key points

The 2020 assessment developed alternative stock hypotheses in a hierarchical risk framework that addressed uncertainties and issues with previous assessments by integrating different models. The results from the reference models are combined in a risk analysis to provide management advice. Notwithstanding the problems of the stock assessment to explain observations, it is designed to be appropriate for the stock (model structure and the ability to use the available data) and derives information that can be used in the harvest control rule.

Yellowfin stock assessments have estimated stock status in relation to the MSY-related reference points. These are risk based because of significant uncertainties in the stock assessments. Because they are appropriate and stock specific.

The Scientific Advisory Committee provides internal review of stock assessments each year; the SAC reports show extensive discussion on model inputs, output uncertainties, stock structure and data gaps. The 2017 benchmark assessments for yellowfin and bigeye were subject to two external reviews each to address significant structural problems in the models which led to the rejection of the 2018 scientific advice and reliance on empirical indicators for advice.

Performance Indicator	Draft scoring range	Data deficient?
1.1.1 – Stock status – BET (UoA3)	≥80	Yes

Rationale or key points

In 2022, IATTC followed a new approach to evaluate stock status (IATTC, 2022). The analysis included 44 different models, covering a wide range of plausible hypotheses about biology as well as different data sets and assumptions, which showed a bimodal distribution of assessment outputs. Taking into account PRI=20%B0 and considering the outputs of all combined models together, it is possible to infer that the 70th %ile and 80th %ile lower confidence limits are above the PRI (PRI=20%B0). Even taking into account some of these models are implausible, the stock is likely to be close to a level consistent with MSY and fishing mortality is likely to be close to the FMSY.

Performance Indicator	Draft scoring range	Data deficient?
1.1.2 – Stock rebuilding – BET (UoA3)	<60 / 60 – 79 / ≥80	Yes / No

Rationale or key points

N/A

Performance Indicator	Draft scoring range	Data deficient?
1.2.1 – Harvest Strategy – BET (UoA3)	60 – 79	No

Rationale or key points

With the IATTC elements indicated bellow:

- Data collection programme through Resolution C-03-05.
- Stock assessment and the provision of advice.

• Resolution C-21-04 on the conservation of tropical tuna in the IATTC area.

It can be concluded that the harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.

The current harvest strategy can be viewed as being likely to work effectively to keep the stock above the limit reference point and around the target. However, the new measures implemented to address the increasing trend in the number of sets on floating objects including an increased number of closure days for vessels that exceed annual BET catch thresholds (IATTC 2021; Resolution C-21-04), prevent reaching the conclusion that the new measures are being effective in reducing the risk on the stock to be driven to undesirable levels relative to the reference points

Performance Indicator	Draft scoring range	Data deficient?
1.2.2 – Harvest control rules and tools – BET (UoA3)	≥80	No

Rationale or key points

The HCR for EPO tropical tunas is set out in Res. C-16-02. Although there is a well-defined HCR, its application to yellowfin and bigeye was suspended 2018-2019 due to the lack of appropriate indicators produced from stock assessments. Indeed, the status quo has been maintained with a roll-over of the 2017 resolution (C-17-02 to C-20-06).

The stock assessments updated in 2020 included a risk assessment carried out for bigeye tuna that provided parameters suitable for the HCR and conducted a decision analysis to guide decision-making under risk. The HCR was applied with a robust risk-based approach, and together with MSE testing, this indicates that main uncertainties are being addressed.

Although the HCR was not applied in 2018, the 2020 stock assessment suggested that the duration of the closure was appropriate, although risks are clearly higher for bigeye than yellowfin, and further interventions may be required. There is provision for review and adjustment according to outcome. On that basis, the available evidence indicates that the tools are likely to be effective controlling exploitation rates.

Performance Indicator	Draft scoring range	Data deficient?
1.2.3 – Information and monitoring – BET (UoA3)	≥80	No

Rationale or key points

Sufficient information (on stock structure, stock productivity, fleet composition), is available to monitor and assess stock status including reporting and size-frequency sampling by each fleet and catch-per-unit-effort data from these fleets. There is a long history of biological and environmental research on EPO tuna stocks, and considerable environmental information that is not explicitly used in the harvest strategy.

Stock abundance and fishery removals through both Electronic Monitoring (EM) systems and observer data are regularly monitored at a level of accuracy and coverage consistent with the HCR, and indicators of catch and effort are available and monitored with sufficient frequency to support the HCR, including annual updates of the stock assessment. In addition, there is observer data which provides discard estimates

Performance Indicator	Draft scoring range	Data deficient?
1.2.4 – Assessment of stock status– BET (UoA3)	≥80	No

Rationale or key points

The 2020 assessment developed alternative stock hypotheses in a hierarchical risk framework. The results from the different models are combined in a risk analysis to provide management advice. Notwithstanding the problems of the stock assessment to explain observations, it is designed to be

appropriate for the stock (model structure and the ability to use the available data) and derives information that can be used in the harvest control rule.
The bigeye stock assessments have estimated stock status in relation to the MSY-related reference points.

Scientific Advisory Committee provides internal review of stock assessments each year; the SAC reports show extensive discussion on model inputs, output uncertainties, stock structure and data gaps. Benchmark assessments were completed in 2020. Because IATTC periodically convenes external expert panels to peer review stock assessments.

Performance Indicator	Draft scoring range	Data deficient?
2.1.1 – Primary species outcome - if PSA is used to score PI 2.1.1 – delete if not applicable	≥80	No

Rationale or key points

For primary species, a score of 80 has been assigned in the pre-assessment, indicating that there is less difficulty in making changes to the data for these species. The current information appears to be relatively stable and well-supported by available data.

Performance Indicator	Draft scoring range	Data deficient?
2.1.2 – Primary species management strategy	≥80	No

Rationale or key points

Management for primary species under the IATTC is robust and effective, with established regulations and monitoring in place to ensure sustainable fishing practices. This strong management framework contributes to a more stable and reliable assessment for primary species, and the data available is generally of good quality

Performance Indicator	Draft scoring range	Data deficient?
2.1.3 – Primary species information	≥80	No

Rationale or key points

For primary species, a score of 80 has been assigned in the pre-assessment, indicating that there is less difficulty in making changes to the data for these species. The current information appears to be relatively stable and well-supported by available data. However more information from al the vessels under assessment will need to be provided

Performance Indicator	Draft scoring range	Data deficient?
2.2.1 – Secondary species outcome - if PSA is used to score PI 2.2.1 – delete if not applicable	≥80	No

Rationale or key points

Secondary species and the overall catch composition may be more susceptible to change as additional data becomes available. Therefore, these results should be taken with caution, as more information is required to refine the assessments. This need for further data is highlighted in the general conclusions of this report.

Performance Indicator	Draft scoring range	Data deficient?
2.2.2 – Secondary species management strategy	≥80	No

Rationale or key points

Secondary species and the overall catch composition may be subject to change as additional data becomes available. Therefore, the results for these indicators should be considered with caution, and more comprehensive data is needed to refine the assessment. This need for additional

information is highlighted in the general conclusions of the management indicators but so far the fisheries reach SG 80.		
Performance Indicator	**Draft scoring range**	**Data deficient?**
2.2.3 – Secondary species information	≥80	No
Rationale or key points		
In contrast, secondary species and the overall catch composition may be more susceptible to change as additional data becomes available. Therefore, these results should be taken with caution, as more information is required to refine the assessments. This need for further data is highlighted in the general conclusions of this report.		
Performance Indicator	**Draft scoring range**	**Data deficient?**
2.3.1 – ETP species information - if PSA is used to score PI 2.3.1 – delete if not applicable	60 – 79	No
Rationale or key points		
Given these uncertainties and the lack of full evidence across all vessels, SG 60 is awarded. Further data, including stock assessments, improved bycatch monitoring, and more comprehensive information about the fleet's adherence to conservation measures, is required to justify a higher score, such as SG 80 or SG 100.		
Performance Indicator	**Draft scoring range**	**Data deficient?**
2.3.2 – ETP species management strategy	≥80	No
Rationale or key points		
Management ETP species are well-structured and implemented effectively in most areas. However, further studies are needed to address potential non-observer mortality rates for dolphins or mother-calf studies, as these may not be fully captured under the current monitoring framework. This additional research will help refine mitigation measures and improve overall management effectiveness.		
Performance Indicator	**Draft scoring range**	**Data deficient?**
2.3.3 – ETP species information	≥80	No
Rationale or key points		
The information on ETP species is robust, providing detailed insights into their interactions with the fishery. This data supports informed contributes to the effective implementation of conservation and management strategies.		
Performance Indicator	**Draft scoring range**	**Data deficient?**
2.4.1 – Habitats outcome - if CSA is used to score PI 2.4.1 – delete if not applicable	60 – 79	No
Rationale or key points		
To meet SG80, detailed information on the specific impact of FADs on habitat structure and function is needed, including data on FAD deployment locations, their potential interactions with vulnerable marine ecosystems (VMEs), and evidence that the use of FADs does not cause significant or irreversible harm to these habitats. Additionally, information on the effectiveness of mitigation measures to minimize habitat damage from FADs would be required		
Performance Indicator	**Draft scoring range**	**Data deficient?**
2.4.2 – Habitats management strategy	60 – 79	No
Rationale or key points		

More information sought - Additional quantitative data on FAD usage, gear loss, and impacts on VMEs, as well as compliance reports from relevant fisheries, will be sought to assess adherence to management requirements and protection measures for VMEs. This includes verifying the effectiveness of regional conservation measures and ensuring proper monitoring and enforcement of these measures across all relevant fisheries

Performance Indicator	Draft scoring range	Data deficient?
2.4.3 – Habitats information	60 – 79	No

Rationale or key points

Further data is needed on the number, location, and timing of FAD deployments and their interactions with VMEs.

Performance Indicator	Draft scoring range	Data deficient?
2.5.1 – Ecosystem outcome - if SICA is used to score PI 2.4.1 – delete if not applicable	≥80	No

Rationale or key points

The ecosystem information gathered is comprehensive and well-managed, providing a solid basis for understanding the environmental impacts of fishing activities. The data supports effective monitoring and adaptive management strategies that are crucial for long-term sustainability.

Performance Indicator	Draft scoring range	Data deficient?
2.5.2 – Ecosystem management strategy	≥80	No

Rationale or key points

Ecosystem management practices are effective under current regulations, ensuring the protection and preservation of marine biodiversity. The management framework is well-established and continuously updated, demonstrating a proactive approach to maintaining ecosystem health and resilience.

Performance Indicator	Draft scoring range	Data deficient?
2.5.3 – Ecosystem information	≥80	No

Rationale or key points

The ecosystem information collected is robust, covering key aspects of the marine environment and its interaction with the fishery.

Performance Indicator	Draft scoring range	Data deficient?
3.1.1 – Legal and/or customary framework	≥80	No

Rationale or key points

The Antigua Convention of 2003 governs fishing for tuna and tuna like species on the high seas and in zones of national jurisdiction (Medley et al. 2021). The objective of the Antigua Convention is to ensure the long-term conservation and sustainable use of the fish stocks in the Convention area in accordance with the relevant rules of international law. The Antigua Convention explicitly recognizes the 1982 United Nations Convention on the Law of the Sea (UNCLOS), the Rio Declaration on Environment and Development and Agenda 21, the Johannesburg Declaration and Plan of Implementation adopted by the World Summit on Sustainable Development (2002), the FAO Code of Conduct for Responsible Fisheries (1995), including the 1993 FAO Compliance Agreement and International Plans of Action adopted by FAO within the framework of the Code of Conduct, and the 1995 UN Fish Stocks Agreement (UNFSA). This promotes the implementation of these international agreements within its area of jurisdiction to deliver management outcomes consistent with MSC Principles 1 and 2. SG60 and SG80 are met. SG100 is not met because the agreements between countries is by consensus and therefore co-operation is effectively not binding.

Ecuador ratified the UN Convention on the Law of the Sea (2012), the UN Fish Stocks agreement (2016), and the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (2019).
The 1974 law was replaced in April 2020 by the Organic Law for the Development of Aquaculture and Fishing which consolidated and updated national law to ensure compliance with the international and regional rules applying to the conservation and management of fishing resources. The Resolutions and Recommendations made by the IATTC for the conservation of tunas are formally adopted by the Ecuadorian government (MPCEIP-SRP-2019-0027-A). Resolutions are translated into regulations through Ministerial agreements issued by the Under Secretariat for Fishery Resources. Ecuador's national legal framework for fisheries and the management of fisheries subject to international cooperation meets SG 80.

The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes arising within the system which is considered to be effective in dealing with most issues and that is appropriate to the context of the UoA.

Both the international and national management systems have a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.

Performance Indicator	Draft scoring range	Data deficient?
3.1.2 – Consultation, roles, and responsibilities	≥80	No

Rationale or key points

Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction.

The IATTC management system demonstrates consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained demonstrates consideration of the information obtained. In Ecuador the LODAP, includes the Advisory Council of Aquaculture and Fisheries as part of the fisheries management system (Article 11). This Council is a forum for dialogue, consultation and agreement between the public and private sectors, and its objective is to advise the fishing sector on monitoring and compliance with internal agreements to facilitate efficient relations between the different actors in the production chain. With the approval of the LODAP and its regulations, it is established that the spaces for dialogue and participation for the NAPs are provided through dialogue roundtables. Ecuador's government adopted as public policy the National Tuna Action Plan in December 2019. The National Tuna Action Plan was developed with stakeholder input and consultative meetings. Stakeholders are invited to participate in meetings that inform the Ecuadorian position on mater being discussed at IATTC meetings.

Finally, consultation occurs at several levels within the IATTC management system. The opportunity to become a Contracting Party or Co-operating Non-contracting Party is open to all, including non-states. Membership has increased over time and there is a high level of participation. There is insufficient evidence to concluded that Ecuador facilitates the effective engagement of all interested and affected parties.

Performance Indicator	Draft scoring range	Data deficient?
3.1.3 – Long term objectives	≥80	No

Rationale or key points

Considering that the Antigua Convention is the overarching management policy for the UoAs, it is demonstrate that clear long-term objectives guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach, are explicit within and required by management policy for all UoAs.

Performance Indicator	Draft scoring range	Data deficient?

3.2.1 – Fishery-specific objectives	≥80	No
Rationale or key points		
There is a long-term management plan to limit fishing capacity to sustainable levels (C-02-03). Short-term objectives are clearly laid out and are measurable for purse seine at least. IATTC now has a closed vessel registry which should help prevent increases in capacity, if not reduce it. Each resolution has short-term objective which are explicit and well defined. However, explicit long and short-term objectives are not necessarily always well-defined or precisely measurable, particularly in relation to achieving MSC Principle 1.		
Performance Indicator	**Draft scoring range**	**Data deficient?**
3.2.2 – Decision-making processes	<60 / 60 – 79 / ≥80	Yes / No
Rationale or key points		
Clear evidence of the established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives is provided by a record evolving IATTC resolutions and recommendations. The decision-making is adaptive in that decisions are evaluated by the various specialist meetings and feedback is provided to the Commission. The Commission responds appropriately by approving new resolutions addressing serious and other important issues. The precautionary approach is included through Article IV of the IATTC Antigua Convention Specifically, the Convention requires that Commission be more cautious when information is uncertain, unreliable, or inadequate and does not use the absence of adequate scientific information as a reason for postponing or failing to take conservation and management measures. Article 4 of the Ecuador's LODAP states that the precautionary approach and the fishing ecosystem approach must be observed, without prejudice to those established in the Constitution of the Republic. Besides, Article No. 96 of the LODAP sets that fishery management measures will be adopted after a scientific technical report from the IPIAP, and socialization with the fishing sector based on the best scientific evidence available and ancestral knowledge in accordance with the population conditions of the resources and the state of the fisheries. There is no evidence that other entities flout the law, with the notable exception of particular fishing companies and fishing vessels, which are listed on the IUU fishing list. Therefore, excluding these, IATTC and its Parties. Given that there are no current outstanding judicial disputes and that so far members have avoided resorting to using international law to settle disputes (SCS, 2022), the management system is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.		
Performance Indicator	**Draft scoring range**	**Data deficient?**
3.2.3 – Compliance and enforcement	60 – 79	No
Rationale or key points		
The team concludes that Monitoring, control and surveillance mechanisms exist, and are implemented in the fishery and there is a reasonable expectation that they are effective. The monitoring, control and surveillance system has been implemented in the fishery and Ecuador is now demonstrating an ability to enforce relevant management measures, strategies and/or rules. In 2019 Ecuador received a yellow card from the European Union over shortcomings in the mechanisms that the country has put in place to ensure compliance with its international obligations as a flag, port and market state. After the notification of the yellow card, Ecuador established a two-year action plan with three priority areas: IUU fishing, coercive measures and the promotion of the application of international standards. Taking into account that the overlapped fisheries (Equatorian UoAs) have a condition raised against the SG 3.2.3b) this pre-assessment raised the same scoring to the fishery under assessment. Non-compliance with conservation measures is likely opportunistic or possibly down to ignorance of the resolutions and/or the lack of sanctions. Non-compliance does not appear to be systematic		

and does not threaten the sustainability of the fishery. However, this SG should be assessed in detailed during a full assessment.		
Performance Indicator	**Draft scoring range**	**Data deficient?**
3.2.4 – Monitoring and management performance evaluation	≥80	No
Rationale or key points		
There are mechanisms in place to evaluate key parts of the fishery-specific management system. The IATTC is subject to regular internal review. In relation to external review, IATTC carried out an external performance review in 2016 but management system is not subject to regular internal and external review.		

7.5. Principle 1

7.5.1. Principle 1 background

7.5.1.1. Additional sub-heading level (use is optional)

Considering that this is a pre-assement and the information of P1 scoring tables were extracted from overlapping fisheries (See **Section 8.2**), no P1 background was prepared. All the documents and references are included in the scoring tables (**Section 7.5.4**).

7.5.2. Catch profiles

The catch profiles used in this report correspond to the period 2019-2024 for the vessel Doña Roge, as detailed in various sections of this document. If the fishery progresses to a full assessment, data from all vessels will be included. However, for this pre-assessment, the profiles presented below reflect exclusively the information from this specific vessel.

7.5.3. Total Allowable Catch (TAC) and catch data

Table 7.5.3.1: Total Allowable Catch (TAC) and catch data of the vessel Doña Roge

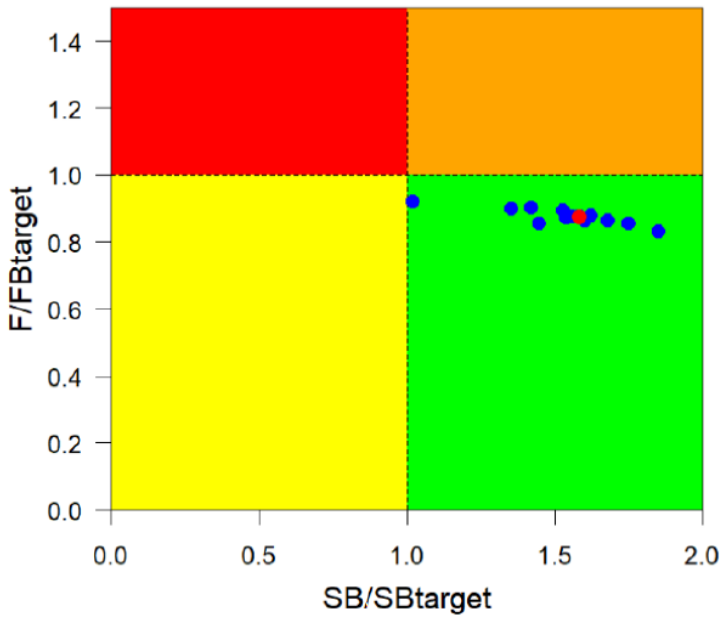
TAC / Catch Data UoA1 (SKT)	**Year**	**Amount**
TAC	Year	NA*
UoA share of TAC	Year	NA
Total catch by UoA (most recent year)	Year 2022	1 514 t
Total catch by UoA (second most recent year)	Year 2023	843 t
TAC / Catch Data UoA2 (YFT)	**Year**	**Amount**
TAC	Year	NA*
UoA share of TAC	Year	NA
Total catch by UoA (most recent year)	Year 2022	503 t
Total catch by UoA (second most recent year)	Year 2023	1 404 t
TAC / Catch Data UoA3 (BET)	**Year**	**Amount**
TAC	Year	NA*

UoA share of TAC	Year	NA
Total catch by UoA (most recent year)	Year 2022	0t
Total catch by UoA (second most recent year)	Year 2023	78 t

** There are no strict Total Allowable Catches (TACs) set for bigeye, yellowfin, or skipjack tuna. Instead, the Inter-American Tropical Tuna Commission (IATTC) implements management measures such as effort controls, seasonal closures, and restrictions on floating-object purse seine fishing*.

7.5.4. Principle 1 Performance Indicator scores and rationales

PI 1.1.1 – Stock status – UoA1 (SKJ)

PI 1.1.1		The stock is at a level that maintains high productivity and has a low probability of recruitment overfishing		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Stock status relative to recruitment impairment**			
	Guidepost	It is **likely** that the stock is above the point of recruitment impairment (PRI).	It is **highly likely** that the stock is above the PRI.	There is a **high degree** of certainty that the stock is above the PRI.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		An assessment of SKJ tuna for the year 2021 was implemented in Stock Synthesis in a similar way as the assessments for BET and YFT. The assessment estimated stock status relative to the limit and target reference points in Resolution C-16-02 and relative to the average from 2017 to 2019 identified as the status quo (IATTC 2016; Resolution C-16-02). The reference model (the one with the baseline assumptions), estimated that the exploitation rate in 2021 was slightly above (1.01) the status quo; several models in the sensitivity trials also estimated that the exploitation rate was above the status quo, but the level varied from slightly above (less than 0.1) to 0.1, with one exception that was high (1.59). A full benchmark stock assessment was conducted (Bi et al. 2024) representing a significant improvement from the interim assessment reported in 2022 and included new methods and data (Maunder et al. 2022). No risk assessment was conducted; therefore, the reference model was assumed to represent the most plausible set of assumptions about the state of nature.  **Figure 7.5.4.1** Skipjack tuna: Kobe plot showing the current biomass and exploitation rates as estimated by the reference model (red dot) and all other models. The results of the interim assessment allow the fishery to meet the requirements of this SI at **SG60, SG80 and SG100**.		
b	**Stock status in relation to achievement of maximum sustainable yield (MSY)**			

	Guidepost		The stock is at or fluctuating around a level consistent with MSY.	There is a high degree of certainty that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.
	Met?		**Yes**	**Yes**

Rationale

Scoring Issue b requires at the SG80 level that the stock is fluctuating around a level consistent with MSY, whereas, at the SG100 level, there must be a high degree of certainty that the stock has been fluctuating around that level or has been above that level over recent years.

The exploitation rate has remained well under the level corresponding to the target (0.338) producing the biomass target reference point of SBR=0.3 (**Figure 7.5.4.2**)

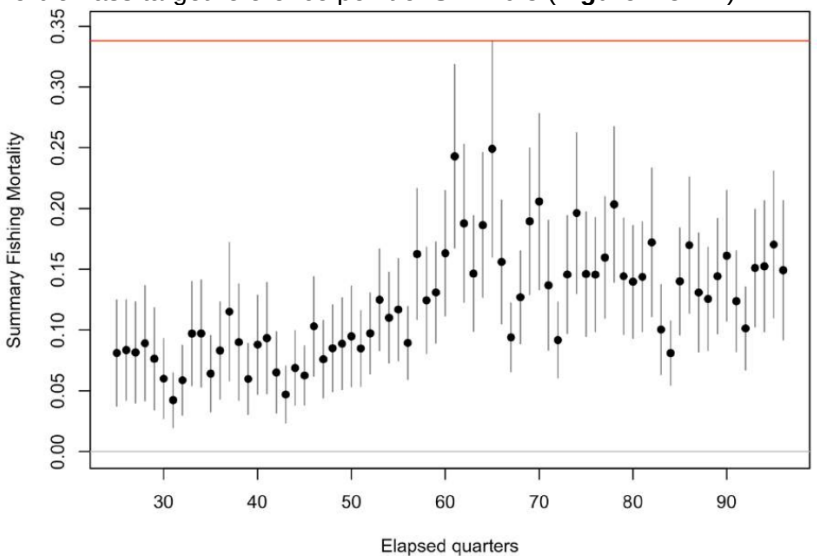


Figure 7.5.4.2 Exploitation rate of skipjack tuna in the EPO as estimated by the reference model. The red line represents the target rate (0.338) that produces the target biomass reference point of SBR=0.3.

If the results of the reference model are considered, then there would be a high degree of certainty that the stock has been above a level consistent with MSY over recent years. **SG100 is met**.

References:

Maunder et al. (2022);
Bi et al. 2024

Stock status relative to reference points

Reference point used in scoring stock relative to PRI (SIa)			
Reference point used in scoring stock relative to MSY (SIb)	$SBR_{TARGET} = B_{CURRENT}$ /*B*MSY F_{TARGET}	$SBR_{TARGET} = 0.3$	

Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**
Data-deficient? (Risk-Based Framework needed)	**No**

PI 1.1.2 – Stock rebuilding – UoA1 (SKJ)

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
Scoring issue		SG 60	SG 80	SG 100
a	**Rebuilding timeframes**			
	Guide post	A rebuilding timeframe is specified for the stock that is the **shorter of 20 years or 2 times its generation time**. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified that does not exceed **1 generation time** for the stock.
	Met?	**N/A**		**N/A**
Rationale		**N/A**		
b	**Rebuilding evaluation**			
	Guide post	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is **evidence** that the rebuilding strategies are rebuilding stocks, or it is **likely** based on simulation modelling, exploitation rates, or previous performance that they will be able to rebuild the stock within the **specified timeframe**.	There is **strong evidence** that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling, exploitation rates, or previous performance that they will be able to rebuild the stock within the **specified timeframe**.
	Met?	**N/A**	**N/A**	**N/A**
Rationale				
Draft scoring range		**N/A**		
Information gap indicator		**Information sufficient to score PI**		

PI 1.2.1 – Harvest strategy – UoA1 (SKJ)

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Harvest strategy design**			
	Guide post	The harvest strategy is **expected** to achieve stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80.	The harvest strategy is **responsive** to the state of the stock and the elements of the harvest strategy **work together** towards achieving stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80.	The harvest strategy is **responsive** to the state of the stock and is **designed** to achieve stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80.
	Met?	**Yes**	**Yes**	**No**
Rationale		The Harvest strategy is a combination of monitoring, stock assessment, harvest control rules (HCRs) and management actions. The harvest strategy uses an HCR designed to keep F from exceeding "the best estimate of the rate corresponding to the maximum sustainable yield (FMSY) for the species that requires the strictest management" (IATTC, 2016). Conservation measures for stocks affected by fleets fishing on Fish-Aggregating Devices or FADs are applied according to Resolution C-19-01 (IATTC 2019). For the period 2022 to 2024 (IATTC 2021 *Resolution C-21-04*), provisions for the management of tuna fishing on FADs include requirements specific to the activities associated to the operations on FADs and limits on the number of active FADs that individual vessels can have at any one time. The IATTC harvest strategy for tropical tunas, including SKJ, was designed to meet the fundamental requirements of the Antigua Convention and that specific components have been developed sequentially, from defining reference points, building the harvest control rule, and constantly improving the stock assessments. For SKJ the strategy worked while the effort control was based only on the application of season closures depending on the status of YFT and BET. After decoupling decisions on SKJ based on YFT and BET status, the IATTC has adjusted this approach to continue applying season closures but now it depends on the status of SKJ in the same way that is has worked for the other two species (Control Union, 2024). Evidently, the elements of the strategy work together towards achieving stock management objectives reflected in PI 1.1.1. satisfying the requirements at **SG60 and SG80**.		
b	**Harvest strategy evaluation**			
	Guide post	The harvest strategy is **likely** to work based on prior experience or plausible argument.	The harvest strategy may not have been fully **tested** but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been **fully evaluated** and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	**Yes**	**Yes**	**No**
Rationale		The IATTC regularly conducts either full "benchmark" stock assessments or updates that are used to inform the HCR and management advice is provided to meet the goal set by the Convention. The harvest strategy can be viewed as having worked effectively for many years as the stock has been shown to be around the biomass producing MSY at least for the last two generations. The control rule is evolving from a simple form to a probabilistic specification while the main control tool is to reduce effort by reducing the length of the fishing season. In 2015, the staff concluded that "measures established in Resolution C-13-01 have had the intended effect of reducing fishing mortality of bigeye and yellowfin tuna to a level not exceeding the MSY" (IATTC, 2015; Document SAC-06-11). **SG80 is met**.		

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
c	**Harvest strategy monitoring**			
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	**Yes**		
Rationale		Full observer coverage of purse seine vessels, supervised offloading records, vessel logbooks and additional data gathering such as from canneries provide the basic inputs for the stock assessment. Vessel catch data are reported annually to the IATTC by the CPCs. The results of the assessment include specific outputs that establish the status of the stock in relation to reference points such that it can be determined whether the harvest strategy is working. SG60 is met.		
d	**Harvest strategy review**			
	Guide post			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			**Yes**
Rationale		IATTC has reviewed, evaluated and adjusted the harvest strategy until it reached its current structure. Resolution C-16-02 provides a comprehensive roadmap for the evaluation of the harvest control rule for tropical tunas (yellowfin, bigeye and skipjack). The Commission's operational baseline derived from the Convention's mandate to define a harvest control rule (HCR) limiting fishing mortality (F) to levels that do not exceed the level corresponding to the maximum sustainable yield (MSY). There is therefore ample evidence documenting the efforts to improve the performance of the harvest strategy with constant reviews and analyses. The fishery meets the requirements at SG100.		
e	**Shark finning**			
	Guide post	There is a **high degree of certainty** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	**NA**	**NA**	**NA**
Rationale		The target stock is not a shark.		
f	**Review of alternative measures**			
	Guide post	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	Met?	**NA**	**NA**	**NA**
Rationale		the level of discards is considered negligible, and the SI is not scored.		
References:				
IATTC, 2016; Control Union, 2024; C-13-01				
Draft scoring range		**≥80**		
Information gap indicator		**Information sufficient to score PI**		

PI 1.2.2 – Harvest control rules and tools – UoA1 (SKJ)

PI 1.2.2		There are well-defined and effective HCRs in place		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**HCRs design and application**			
	Guide post	**Generally understood** HCRs are in place **or available** that are **expected** to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	**Well defined** HCRs are **in place** that **ensure** that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock **fluctuating around** a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock **fluctuating at or above** a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, **most** of the time.
	Met?	**Yes / No**	**Yes**	**No**
Rationale		IATTC Resolution C-16-02 outlines the HCR for tropical tunas in the IATTC Commission Area as: • If the probability that F>Flim is >10%, management measures shall be established such that there is at least a 50% probability that F will reduce to FMSY or below, and with a probability of <10% of F>Flim. • If the probability that SB<Sblim is >10%, management measures shall be established such that there is at least a 50% probability that SB will recover to SBMSY or above, and with a probability of <10% that SB will decline to <Sblim within two generations or 5 years, whichever is greater. • Purse seine closures can be established for multiple years and shall attempt to prevent the fishing mortality rate (F) from exceeding the best estimate of the rate corresponding to the maximum sustainable yield (FMSY) for the species that requires the strictest management. The IATTC's decision to adopt the rule is evidence that the HCR is in now formally in place as required at **SG80**. Additional evidence that the HCR is functional is its systematic use and implementation through temporal closures. In recent years, the Commission has adopted the staff recommendations, therefore, based on evidence of implementation, the HCR and its main associated tool can therefore be said to be in place as required at SG80 and are linked to reference points in a manner consistent with the harvest strategy.		
b	**The robustness of HCRs to uncertainty**			
	Guide post		The HCRs are likely to be robust to the main uncertainties.	The HCRs take account of a **wide** range of uncertainties including the ecological role of the stock, and there is **evidence** that the HCRs are robust to the main uncertainties.
	Met?		**No**	**No**
Rationale		As the performance of the HCR under a range of uncertainties has been investigated with more attention in the cases of YFT and BET, in the case of SKJ, the robustness of the HCR to uncertainties associated to the estimation of stock status was supported by linking to the management of the other two species of concern to the IATTC. The evidence indicates that the construction and application of the HCR rule for SKJ has been improving to incorporate a wider range of uncertainties and to evaluate their impact on alternative courses of action. However, the uncertainty and risk caused by the recent increase in the number of sets on objects has not been addressed fully and represents a vulnerability to the performance of the HCR for SKJ. It should be noted that this rationale also reflects the agreement and conclusion of harmonization talks with other CABs regarding the issue discussed above. Therefore, it is considered that the HCR may not yet be robust to the main uncertainties and **SG80 is not met**.		
c	**Evaluation of HCRs**			

	Guide post	There is **some evidence** that tools used or **available** to implement HCRs are appropriate and effective in controlling exploitation.	**Available evidence indicates** that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	**Evidence clearly shows** that the tools in use are effective in achieving the exploitation levels required under the HCRs.
	Met?	**Yes**	**Yes**	**No**
Rationale		Cited by Control Union, 2024: '*The main tool used for the implementation of the HCR in the management of the Eastern Pacific tropical tunas is the temporal closure as a form of effort control. As demonstrated mainly by the estimated status and trend of the SKJ stock in recent years, the tools have shown to be effective in achieving the exploitation levels required under the HCR. Regarding the old approach, the IATTC staff concluded that the "measures established in Resolution C-13-01 have had the intended effect of reducing the fishing mortality of bigeye and yellowfin to a level not exceeding the MSY" (IATTC, 2015; Recommendations by the staff 89 - 04d). For SKJ, the approach has worked if it was possible to verify that season closures were effective to all three species given the assumption that the vulnerability to the fishery (regardless of set type) was smaller for SKJ compared to YFT and about the same compared to BET.* *Because the direct application of the HCR to SKJ, including a dedicated stock assessment represents a new approach to manage the catch of this stock, there is not sufficient evidence yet that the way closure length is presently being implemented will have the expected effect. However, given the history and the structure of the risk analysis, it is expected that better handling of uncertainties, better accounting for biological traits and fishery factors, will lead to more robust decisions, making the tools effective to achieve the exploitation levels required under the HCR.* ***The fishery meets SG60 and SG80*** *but not SG100*.'		
References:				
Resolution C-16-02; Resolution C-19-01 (IATTC 2019); Control Union, 2024				
Draft scoring range		**60-79**		
Information gap indicator		**Information sufficient to score PI**		

PI 1.2.3 – Information and monitoring – UoA1 (SKJ)

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring issue		SG 60	SG 80	SG 100
a	Range of information			
	Guide post	**Some** relevant information related to stock structure, stock productivity, and fleet composition is available to support the harvest strategy.	**Sufficient** relevant information related to stock structure, stock productivity, fleet composition, and other data are available to support the harvest strategy.	A **comprehensive range** of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals, and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	**Yes**	**Yes**	**No**
Rationale		There are good data available on landings, effort and size, including some operational data and some discard data. The stock assessment uses fishery data to estimate an index of abundance and its associated length composition. Sixteen fisheries are defined for the stock assessment of skipjack tuna in the EPO, classified by gear (purse- seine, longline, discards or echosounder buoy), set type (floating object, unassociated, or dolphin), unit of catch (number or weight), and geographical area of operation. The information used to estimate the total purse seine catch by species comes from processing companies, on-board observers, vessel logbooks, and in-port sampling by IATTC staff. The assessment considers data on biology and life history, recruitment as well as movements and stock structure, additionally, the current interim assessment is expected to improve with in inclusion of tagging data (Fuller et al. 2023, Maunder 2023). On this basis, **SG60 and SG80 are met**.		
b	Monitoring			
	Guide post	Stock abundance and UoA removals are monitored and **at least 1 indicator** is available and monitored with sufficient frequency to support the harvest strategy.	Stock abundance and UoA removals are **regularly monitored at a level of accuracy and coverage consistent with the harvest strategy**, and **1 or more indicators** are available and monitored with sufficient frequency to support the harvest strategy.	**All information** required by the harvest strategy is monitored with high frequency and a high degree of certainty, and there is a good understanding of the inherent **uncertainties** in the information (data) and the robustness of assessment and management in dealing with this uncertainty.
	Met?	**Yes**	**Yes**	**No**
Rationale		Control Union, 2024 '*Because the current form of the SKJ stock assessment is new, it is not possible to ascertain directly that abundance is "regularly monitored at a level of accuracy and coverage consistent with the harvest control rule", however, the team acknowledges the progress in the different components of the research plan, the results of the interim assessment, and the frequency with which the other stocks are assessed (considering that decisions for the three species are linked). Additionally, stock status indicators are updated every year, and they are an important mechanism to complement the assessment of the three stocks. This ensemble of actions is considered consistent with GSA2.6.1 about the information required to meet PI1.2.3 SIb relative to stock abundance: "the requirement for 'stock abundance' information at SG60 and SG80 may be met using surrogate indicators that provide an adequate proxy for stock abundance". The team concludes that* ***SG60 and SG80 are met***.'		
c	Comprehensiveness of information			

	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		**Yes**	
Rationale		The information used to estimate the total purse seine catch by species comes from four main sources: processing companies, on-board observers, vessel logbooks, and in-port sampling by IATTC staff. Stock assessments use data from the commercial fleet. Most of the catch of tropical tunas is obtained by large purse seiners (363 t and over), however catch data is obtained for the entire fleet of all types, gear and flag. There is, therefore, good information on all other fishery removals from the stock, SG80 is met.		
Draft scoring range			**≥80**	
Information gap indicator			**Information sufficient to score PI**	

PI 1.2.4 – Assessment of stock status – UoA1 (SKJ)

PI 1.2.4		There is an assessment of the stock status		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Appropriateness of assessment to stock under consideration**			
	Guide post		The assessment is appropriate for the stock and for the harvest strategy.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?		**Yes**	**No**
Rationale		The status of skipjack tuna in the EPO has been difficult to assess because a yield per recruit analyses indicated that maximum production is achieved with very high exploitation rates and because recruitment is assumed to be independent from spawner abundance (Maunder et al. 2022). A full benchmark stock assessment was conducted (Bi et al. 2024) representing a significant improvement from the interim assessment reported in 2022 and included new methods and data (Maunder et al. 2022). No risk assessment was conducted, therefore, the reference model was assumed to represent the most plausible set of assumptions about the state of nature. The assessment is therefore considered to be appropriate for the stock and the HCR meeting SG80. The SKJ stock assessment considers most of the major features relevant to the biology of the species and the nature of the UoA, however, the external review of the assessment pointed out a few issues that may improve the reliability of the results, these issues include standardization of the long-line CPUE, estimation of natural mortality and selectivity. Therefore, the fishery **meets** the requirements at **SG80** but not SG100.		
b	**Assessment approach**			
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	
	Met?	**Yes**	**Yes**	
Rationale		Resolution C-16-03 describing the structure and operation of the HCR, indicates that stocks are to be evaluated in terms of spawning biomass and fishing mortality (IATTC 2016). Control Union, 2024 '*The relationship with target and limit reference points is to be evaluated in probabilistic terms and decisions made if thresholds are exceeded. The latest approach taken for the stock assessment of SKJ tuna (Maunder et al. 2022), evaluated stock status relative to the spawning biomass LRP (see rationale in PI 1.1.1 SIa for a detailed description of the construction of the LRP for all tropical tunas) and a proxy TRP related to the biomass level producing MSY. This proxy for the biomass level producing MSY in SKJ is proposed conservatively assuming that SKJ is more productive than BET and YFT and choosing a value close to that of YFT. The validity of this assumption for the TRP was further investigated and demonstrated to be effectively conservative, all resulting values of depletion associated to MSY based on more realistic assumptions for SKJ were lower than the assumed proxy (Maunder 2023). The fishing mortality corresponding to the same quantities were also obtained. The stock assessment estimates stock status relative to reference points that are appropriate to the stock and are estimated, meets the requirements at SG60 and SG80.*'		
c	**Uncertainty in the assessment**			
	Guide post	The assessment **identifies major sources** of uncertainty.	The assessment **takes uncertainty into account**.	The assessment evaluates stock status relative to reference points in a **probabilistic** way.
	Met?	**Yes**	**Yes**	**Yes**

Rationale		The stock assessment estimates parameters accounting for different types of uncertainties that have been identified in the biology, fishery and model specification. Stock status is presented as the probability of being beyond the IATTC's reference points. To ensure that management choices meet the requirements of the HCR as described in Resolution C-16-02 (IATTC 2016), the results of the stock assessment are presented in probabilistic terms so that the HCR can be evaluated. The fishery meets the requirements at **SG60, SG80 and SG100**.		
d	**Evaluation of assessment**			
	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			**No**
Rationale		The SG100 level is not met		
e	**Peer review of assessment**			
	Guide post		The assessment of stock status is subject to peer review.	The assessment has been **internally and externally peer** reviewed.
	Met?		**Yes**	**Yes**
Rationale		The IATTC's stock assessments are regularly reviewed internally by the Scientific Advisory Committee (SAC), and derived recommendations by the staff are discussed during SAC meetings. Reports are presented with discussions on model inputs, output uncertainties, stock structure and data gaps (e.g. IATTC 2022b). The interim skipjack tuna stock assessment (Maunder et al., 2022) was externally reviewed in November 2022 (Bence et al., 2022). The review process included requests for data and specific actions on model components and operation. **SG100 is met**.		
Draft scoring range		**≥80**		
Information gap indicator		**Information sufficient to score PI**		

PI 1.1.1 – Stock status – UoA2 (YFT)

PI 1.1.1		The stock is at a level that maintains high productivity and has a low probability of recruitment overfishing		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Stock status relative to recruitment impairment**			
	Guidepost	It is **likely** that the stock is above the point of recruitment impairment (PRI).	It is **highly likely** that the stock is above the PRI.	There is a **high degree** of certainty that the stock is above the PRI.
	Met?	**Yes**	**Yes**	**No**
		In 2020, a benchmark assessment was conducted that served as basis for a risk analysis (IATTC Fishery Status 2020). The analysis included 48 models, covering a wide range of plausible hypotheses about biology as well as different data sets and assumptions. Resolution C-16-02 defines target and limit reference points, expressed in terms of spawning biomass (B) and fishing mortality (F), for the tropical tuna species: bigeye, yellowfin, and skipjack. The spawning biomass limit reference point (BLIM) is the threshold value of B that should be avoided because further depletion could endanger the sustainability of the stock. The interim BLIM adopted by the IATTC in 2014 is the spawning biomass that produces 50% of the unexploited recruitment (R0) if the stock recruitment relationship follows the Beverton-Holt function with a steepness (h) of 0.75. These are defaults chosen by the Commission rather than analytically determined because the stock-recruitment relationship cannot be fitted, and the stock-recruit function and steepness have to be assumed (Control Union, 2024). To capture the uncertainty about the population dynamics of yellowfin in the EPO, the 48 reference models (IATTC – SAC 11-15), each reflecting a different hypothesis, were considered when evaluating the status of the stock. Results from each model are shown on a Kobe plot (**Figure 7.5.4.3**)		

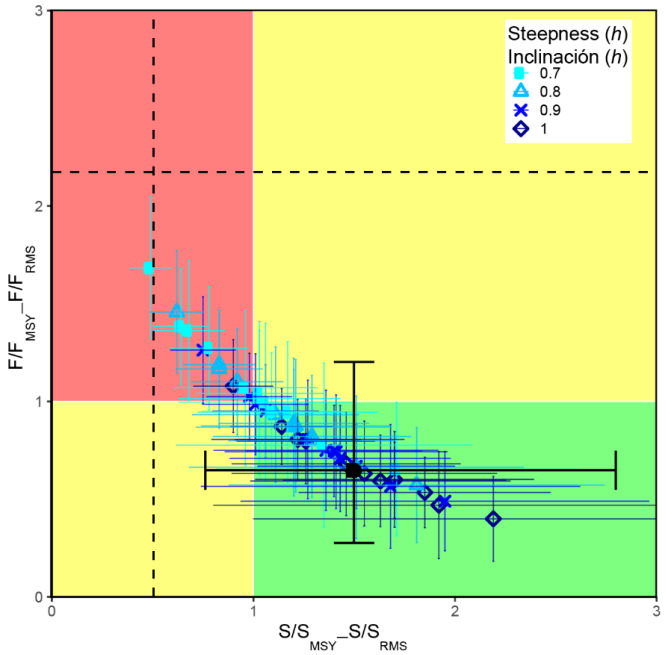
<table>
<tr><td>Rationale</td><td colspan="4"> 

Figure 7.5.4.3 Kobe (phase) plot showing the current estimates of spawning stock size (S) and fishing mortality (F) of yellowfin tuna relative to MSY reference points. The coloured panels are separated by the target reference points (SMSY and FMSY) and limit reference points (dashed lines). The centre point for each model indicates the current stock status, based on the average fishing mortality (F) over the last three years. The solid black circle represents all models combined. The lines around each estimate represent its approximate 95% confidence interval. Source: IATTC-SAC-11-15

There is no direct guidance in MSC Certification Requirements on what would be considered “recruitment impaired”. The MSC default PRI=20%B0 is based on a consideration of precautionary values for these parameters that would apply across a wide range of fisheries. Using this PRI and a default 0.75 steepness in the B-H model implies a recruitment of 75% compared to the unexploited recruitment level. A PRI of 8%B0 is consistent with a 75% recruitment level if steepness is 0.9. The implication is that the Commission’s choice of limit reference point is less precautionary than the PRI required by MSC, although a lower PRI than the default 20%B0 may be justified on the use of a dynamic B0_d which takes account of long-term changes in levels of recruitment (Control Union, 2024).

Based on the 36 models (excluding h=1.0 as implausible), it can be found that 4 have a current (median) status below the model’s PRI, which translates into around 11%. So, it is possible to interpret that biomass is being greater than 80% probability (“highly likely”) above its PRI, so SG60 and SG80 are met, but SG100 is not met.</td></tr>
<tr><td rowspan="3">b</td><td colspan="4">Stock status in relation to achievement of maximum sustainable yield (MSY)</td></tr>
<tr><td>Guidepost</td><td></td><td>The stock is at or fluctuating around a level consistent with MSY.</td><td>There is a high degree of certainty that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.</td></tr>
<tr><td>Met?</td><td></td><td>Yes</td><td>No</td></tr>
<tr><td>Rationale</td><td colspan="4">According to the risk analysis, the model-weighted median of the B2019/BMSY_d ratio across all 48 models is 1.58 and the probability that the stock is overfished (B2019 < BMSY_d) is 12%. In terms of fishing mortality, the probability that current fishing mortality is above MSY levels is 9% (Control Union, 2024). Even considering some of these models are implausible, the stock is likely to be above a level consistent with MSY. SG80 can me meet.</td></tr>
<tr><td colspan="5">Stock status relative to reference points</td></tr>
</table>

	Type of reference point	Value of reference point	Current stock status relative to reference point
Reference point used in scoring stock relative to PRI (SIa)	20%B0	-	Prob Scur/SLIMIT = 0% across all runs Scur/S0 from 0.11 to 0.30 across all runs
Reference point used in scoring stock relative to MSY (SIb)	SB_{MSY}	-	Prob Scur < SMSY = 0.12 Prob Fcur > FMSY = 0.09
References			
IATTC Fishery Status 2020; Resolution C-16-02; Control Union, 2024			
Draft scoring range	**≥80**		
Information gap indicator	**Information sufficient to score PI**		
Data-deficient? (Risk-Based Framework needed)	**No**		

PI 1.1.2 – Stock rebuilding – UoA2 (YFT)

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
Scoring issue		SG 60	SG 80	SG 100
a	**Rebuilding timeframes**			
	Guide post	A rebuilding timeframe is specified for the stock that is the **shorter of 20 years or 2 times its generation time**. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified that does not exceed **1 generation time** for the stock.
	Met?	**N/A**		**N/A**
Rationale		**N/A**		
b	**Rebuilding evaluation**			
	Guide post	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is **evidence** that the rebuilding strategies are rebuilding stocks, or it is **likely** based on simulation modelling, exploitation rates, or previous performance that they will be able to rebuild the stock within the **specified timeframe**.	There is **strong evidence** that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling, exploitation rates, or previous performance that they will be able to rebuild the stock within the **specified timeframe**.
	Met?	**N/A**	**N/A**	**N/A**
Rationale				
Draft scoring range		**N/A**		
Information gap indicator		**Information sufficient to score PI**		

PI 1.2.1 – Harvest strategy – UoA2 (YFT)

<table>
<tr><td colspan="2">PI 1.2.1</td><td colspan="3">There is a robust and precautionary harvest strategy in place</td></tr>
<tr><td colspan="2">Scoring issue</td><td>SG 60</td><td>SG 80</td><td>SG 100</td></tr>
<tr><td rowspan="3">a</td><td colspan="4">Harvest strategy design</td></tr>
<tr><td>Guide post</td><td>The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80.</td><td>The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80.</td><td>The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80.</td></tr>
<tr><td>Met?</td><td>Yes</td><td>Yes</td><td>No</td></tr>
<tr><td colspan="2">Rationale</td><td colspan="3">The Harvest strategy is a combination of monitoring, stock assessment, harvest control rules (HCRs) and management actions. A summary of the IATTC elements are indicated bellow:

• Data collection programme through Resolution C-03-05.
• Stock assessment and the provision of advice.
• Resolution C-21-04 on the conservation of tropical tuna in the IATTC area. The main conservation measure established by the IATTC in Resolution C-21-04 that establishes a multi-annual management measure for tropical tunas in the eastern Pacific Ocean during 2022-2024 calls for:

- A 72-day closure for purse seiners greater than 182 tons capacity through 2024.
- Additional days of closure for vessels exceeding a particular annual bigeye catch limit (i.e. 8 additional days in 2022 if a vessel has exceeded 1200 tons in 2017-2019, and 10-13-16-19-22 additional days in 2023-2024 if a vessel has exceeded 1200-1500-1800-2100-2400 tons, respectively, in previous year.
- Strengthen the monitoring and control system for tropical tuna species (particularly bigeye) catches through on-board observers, logbooks, port sampling and information from tuna processing facilities to control individual vessel bigeye catches.
- A seasonal closure of the purse seine fishery in an area known as "El Corralito", west of the Galapagos Islands, where catch rates of small bigeye are high.
- A full retention requirement for all purse seine vessels regarding bigeye, skipjack and yellowfin tunas.
- Bigeye catch limits for the main longline fishing nations.
- Limits on the number of active FADs that each purse seiner can have at any time, ranging from 66 FADs/vessel for the smallest ones to 400 FADs/vessel for Class 6 vessels (1,200 m3 capacity). These ranges will decrease to 64 to 340 in 2023 and 50 to 340 in 2024.
- All purse seines are also required to not deploy FADs 15 days before the selected closure period and Class 6 vessels to recover within 15 days prior to the start of the closure period a number of FADs equal to the number of FADs set upon during that same period.
- And in order to support the scientific analysis of FAD fisheries, the measure requires that CPCs or vessels report daily information on all active FADs (position and echosounder biomass data) as well as Vessel Monitoring System (VMS) data to the Secretariat.

We can conclude that the harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80, meeting SG60 and SG80.</td></tr>
<tr><td rowspan="2">b</td><td colspan="4">Harvest strategy evaluation</td></tr>
<tr><td>Guide post</td><td>The harvest strategy is likely to work based on prior</td><td>The harvest strategy may not have been fully tested but</td><td>The performance of the harvest strategy has been fully evaluated and evidence</td></tr>
</table>

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
		experience or plausible argument.	evidence exists that it is achieving its objectives.	exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	**Yes**	**Yes**	**No**
Rationale		The probability that the F and B limit reference points have been exceeded is zero. There is therefore evidence that the harvest strategy is achieving its objectives; SG60 and SG80 are met.		
c	**Harvest strategy monitoring**			
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	**Yes**		
Rationale		Monitoring is in place. Data are collected to estimate management quantities, which indicates whether the harvest strategy is working or not, meeting SG60.		
d	**Harvest strategy review**			
	Guide post			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			**No**
Rationale		C-20-06 required a review of the harvest strategy annually (para. 21). IATTC scientific staff recommend that the provisions of C-17-02, rolled over into C-20-06 for 2021, be maintained in the meantime. Because the harvest strategy was not fully reviewed, SG100 is not met.		
e	**Shark finning**			
	Guide post	There is a **high degree of certainty** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	**NA**	**NA**	**NA**
Rationale		The target stock is not a shark.		
f	**Review of alternative measures**			
	Guide post	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	Met?	**NA**	**NA**	**NA**
Rationale		The term 'unwanted catch' shall be interpreted by the team as the part of the catch that a fisher did not intend to catch but could not avoid and did not want or chose not to use. This fishery targets yellowfin specifically, and there are no requirements such as minimum or maximum landing sizes or quotas which could lead to any of this catch being unwanted. This PI is not scored.		
References				
Resolution C-21-04; C-20-06				

PI 1.2.1	There is a robust and precautionary harvest strategy in place
Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

PI 1.2.2 – Harvest control rules and tools – UoA2 (YFT)

PI 1.2.2		There are well-defined and effective HCRs in place		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**HCRs design and application**			
	Guide post	**Generally understood** HCRs are in place **or available** that are **expected** to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	**Well defined** HCRs are **in place** that **ensure** that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock **fluctuating around** a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock **fluctuating at or above** a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, **most** of the time.
	Met?	**Yes**	**Yes**	**No**
Rationale		The HCR for EPO tropical tunas is set out in Res. C-16-02, as follows: • If the probability that F>Flim is >10%, management measures shall be established such that there is at least a 50% probability that F will reduce to FMSY or below, and with a probability of <10% of F>Flim. • If the probability that B<Blim is >10%, management measures shall be established such that there is at least a 50% probability that B will recover to BMSY or above, and with a probability of <10% that B will decline to <Blim within two generations or 5 years, whichever is greater. Although there is a well-defined HCR, its application to yellowfin and bigeye was suspended 2018-2019 due to the lack of appropriate indicators produced from stock assessments. Indeed, the status quo has been maintained with a roll-over of the 2017 resolution (C-17-02 to C-20-06). Considering that the current HCR approach is precautionary and it is expected to keep the stock fluctuating around or above MSY and to reduce exploitation as the stock approaches its PRI, and it is in place, **SG60 and SG80 are met**.		
b	**The robustness of HCRs to uncertainty**			
	Guide post		The HCRs are likely to be robust to the main uncertainties.	The HCRs take account of a **wide** range of uncertainties including the ecological role of the stock, and there is **evidence** that the HCRs are robust to the main uncertainties.
	Met?		**Yes**	**No**
Rationale		In 2020, stock assessments were updated successfully, and a risk assessment was triggered that provided parameters suitable for the HCR and conducted a decision analysis to guide decision-making under risk. The HCR was applied with a robust risk-based approach, and together with MSE testing, this indicates that main uncertainties are being addressed. On this basis, **SG80 is met.**		
c	**Evaluation of HCRs**			
	Guide post	There is **some evidence** that tools used or **available** to implement HCRs are appropriate and effective in controlling exploitation.	**Available evidence indicates** that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	**Evidence clearly shows** that the tools in use are effective in achieving the exploitation levels required under the HCRs.
	Met?	**Yes**	**Yes**	**No**

Rationale	The tools to implement the HCR are set out in Res. C-17-01 and C-17-02. Considering the seasonal closure as the key tool and according to the 2020 stock assessment, the duration of the closure remains appropriate for yellowfin. There is provision for review and adjustment according to outcome. On that basis, the available evidence indicates that the tools are likely to be effective controlling exploitation rates. **SG60 and SG80 are met**.
References	
C-17-01; C-17-02	
Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

PI 1.2.3 – Information and monitoring – UoA2 (YFT)

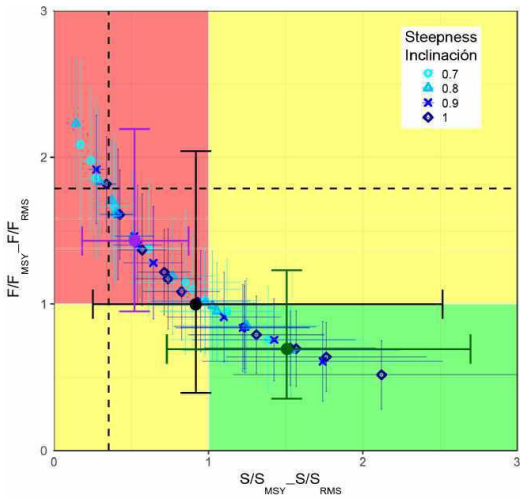
PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Range of information**			
	Guide post	**Some** relevant information related to stock structure, stock productivity, and fleet composition is available to support the harvest strategy.	**Sufficient** relevant information related to stock structure, stock productivity, fleet composition, and other data are available to support the harvest strategy.	A **comprehensive range** of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals, and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	**Yes**	**Yes**	**No**
Rationale		Sufficient information (on stock structure, stock productivity, fleet composition), is available to monitor and assess stock status including reporting and size-frequency sampling by each fleet and catch-per-unit-effort data from these fleets. There is a long history of biological and environmental research on EPO tuna stocks, and considerable environmental information that is not explicitly used in the harvest strategy. Biology and life history are relatively well understood and sufficient for stock assessment. Fleet compositions are well monitored. Overall, these data are sufficient for stock assessments to monitor status and mortality rates to support a harvest strategy**, meeting SG80**.		
b	**Monitoring**			
	Guide post	Stock abundance and UoA removals are monitored and **at least 1 indicator** is available and monitored with sufficient frequency to support the harvest strategy.	Stock abundance and UoA removals are **regularly monitored at a level of accuracy and coverage consistent with the harvest strategy**, and **1 or more indicators** are available and monitored with sufficient frequency to support the harvest strategy.	**All information** required by the harvest strategy is monitored with high frequency and a high degree of certainty, and there is a good understanding of the inherent **uncertainties** in the information (data) and the robustness of assessment and management in dealing with this uncertainty.
	Met?	**Yes**	**Yes**	**No**
Rationale		Stock abundance and fishery removals through both Electronic Monitoring (EM) systems and observer data are regularly monitored at a level of accuracy and coverage consistent with the HCR, and indicators of catch and effort are available and monitored with sufficient frequency to support the HCR, including annual updates of the stock assessment. In addition, there is observer data which provides discard estimates. On this basis, data are sufficient for the requirements of the harvest strategy; **SG60 and SG80 are met**.		
c	**Comprehensiveness of information**			
	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		**Yes**	
Rationale		There has been an IATTC observer program since 1993 for larger vessels. Catches are reasonably well monitored and are sufficient for stock assessment. The level of monitoring is sufficient for the harvest strategy, and therefore **meets SG80**.		
Draft scoring range		**≥80**		

PI 1.2.4 – Assessment of stock status – UoA2 (YFT)

PI 1.2.4		There is an assessment of the stock status		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Appropriateness of assessment to stock under consideration**			
	Guide post		The assessment is appropriate for the stock and for the harvest strategy.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?		**Yes**	**No**
Rationale		The integrated age-structured Stock Synthesis stock assessment was benchmarked in 2016 and 2020. The stock assessment requires substantial amounts of information, including data on retained catches, discards, indices of abundance (CPUE), and the size compositions of the catches of the various fisheries. The 2020 assessment developed alternative stock hypotheses in a hierarchical risk framework that addressed uncertainties and issues with previous assessments by integrating different models. The results from the reference models are combined in a risk analysis to provide management advice. Notwithstanding the problems of the stock assessment to explain observations, it is designed to be appropriate for the stock (model structure and the ability to use the available data) and derives information that can be used in the harvest control rule. This meets SG80.		
b	**Assessment approach**			
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	
	Met?	**Yes**	**Yes**	
Rationale		Yellowfin stock assessments have estimated stock status in relation to the MSY-related reference points, SG60 is met. These are risk based because of significant uncertainties in the stock assessments. Because they are appropriate and stock specific, therefore **SG80 is also met**.		
c	**Uncertainty in the assessment**			
	Guide post	The assessment **identifies major sources** of uncertainty.	The assessment **takes uncertainty into account**.	The assessment evaluates stock status relative to reference points in a **probabilistic** way.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		In 2020, a risk analysis was conducted for bigeye to evaluate several management quantities related to the IATTC HCR. As a result, stock status was presented as probabilities and a decision analysis was used to determine best management action to limit risks. This approach not only takes into account uncertainty in evaluating stock status but attempts to account for uncertainty in a fully probabilistic way, meeting **SG60, SG80 and SG100**.		
d	**Evaluation of assessment**			
	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			**No**

Rationale		2020 benchmark assessment integrates 12 reference models, each with four steepness assumptions (0.7, 0.8, 0.9, and 1.0), for a total of 48 models developed within a hierarchical framework. The results were used within a risk assessment to determine a probability-based stock status. However, having been tested, it is not clear that the assessment is robust. A decision analysis has been used to manage the risks. Because the stock assessment is not robust, SG100 is not met.		
e	**Peer review of assessment**			
	Guide post		The assessment of stock status is subject to peer review.	The assessment has been **internally and externally peer** reviewed.
	Met?		**Yes**	**Yes**
Rationale		The Scientific Advisory Committee provides internal review of stock assessments each year; the SAC reports show extensive discussion on model inputs, output uncertainties, stock structure and data gaps. This indicates that the assessments are subject to routine peer review, so **SG80 is met**. The 2017 benchmark assessments for yellowfin and bigeye were subject to two external reviews each to address significant structural problems in the models which led to the rejection of the 2018 scientific advice and reliance on empirical indicators for advice. Benchmark assessments were completed in 2020. Because IATTC periodically convenes external expert panels to peer review stock assessments, **SG100 is met**.		
Draft scoring range		**≥80**		
Information gap indicator		**Information sufficient to score PI**		

PI 1.1.1 – Stock status – UoA3 (BET)

PI 1.1.1		The stock is at a level that maintains high productivity and has a low probability of recruitment overfishing		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Stock status relative to recruitment impairment**			
	Guidepost	It is **likely** that the stock is above the point of recruitment impairment (PRI).	It is **highly likely** that the stock is above the PRI.	There is a **high degree** of certainty that the stock is above the PRI.
	Met?	**Yes**	**Yes**	**No**
Rationale		In 2022, IATTC followed a new approach to evaluate stock status (IATTC, 2022). The analysis included 44 different models, covering a wide range of plausible hypotheses about biology as well as different data sets and assumptions, which showed a bimodal distribution of assessment outputs (**Figure 7.5.4.4**). Resolution C-16-02 defines target and limit reference points, expressed in terms of spawning biomass (B) and fishing mortality (F), for the tropical tuna species: bigeye, yellowfin, and skipjack. The spawning biomass limit reference point (BLIM) is the threshold value of B that should be avoided because further depletion could endanger the sustainability of the stock. The interim BLIM adopted by the IATTC in 2014 is the spawning biomass that produces 50% of the unexploited recruitment (R0) if the stock recruitment relationship follows the Beverton-Holt function with a steepness (h) of 0.75. These are defaults chosen by the Commission rather than analytically determined because the stock-recruitment relationship cannot be fitted, and the stock-recruit function and steepness have to be assumed (Control Union, 2024).  **Figure 7.5.4.4** Kobe plot of the most recent estimates of spawning biomass (S) and fishing mortality (F) relative to their MSY reference points (SMSY_d and FMSY) estimated by the 44 converged reference model runs (see Table 4 of IATTC 2022). Each dot is based on the average F over the most recent three years. The dashed lines represent the limit reference points averaged for the 44 converged reference model runs. The error bars represent the 95% confidence interval of the estimates. The black, purple, and green dots are the combined estimates across all models, all pessimistic models, and all optimistic models, respectively. Source: IATTC, 2022 There is no direct guidance in MSC Certification Requirements on what would be considered “recruitment impaired”. The MSC default PRI=20%B0 is based on a consideration of precautionary values for these parameters that would apply across a wide range of fisheries. Using this PRI and a default 0.75 steepness in the B-H model implies a recruitment of 75% compared to the unexploited recruitment level. Taking into account PRI=20%B0 and considering the outputs of all combined models together (the black dot in the Kobe plot in **Figure 7.5.4.4**), it is possible to infer that the 70th %ile and 80th %ile lower confidence limits are above the PRI (PRI=20%B0), meeting SG60 and SG80 (Control Union, 2024).		

b	**Stock status in relation to achievement of maximum sustainable yield (MSY)**			
	Guidepost		The stock is at or fluctuating around a level consistent with MSY.	There is a high degree of certainty that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.
	Met?		**Yes**	**No**
Rationale		According to the risk analysis, the model-weighted median of the B2019/BMSY_d ratio across all 44 models is 0.92 and the probability that the stock is below the MSY level (B2019 < BMSY_d) is 53%. In terms of fishing mortality, the probability that current fishing mortality is above MSY levels is 50% (Control Union, 2024). Even taking into account some of these models are implausible, the stock is likely to be close to a level consistent with MSY and fishing mortality is likely to be close to the FMSY (**Figure 7.5.4.4**). SG80 can me meet.		
References				
IATTC, 2022				
Stock status relative to reference points				
	Type of reference point		Value of reference point	Current stock status relative to reference point
Reference point used in scoring stock relative to PRI (SIa)	20%B0		-	3.07
Reference point used in scoring stock relative to MSY (SIb)	SB_{MSY}		-	0.92
Draft scoring range		**≥80**		
Information gap indicator		**Information sufficient to score PI**		
Data-deficient? (Risk-Based Framework needed)		**No**		

PI 1.1.2 – Stock rebuilding - UoA3 (BET)

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
Scoring issue		SG 60	SG 80	SG 100
a	**Rebuilding timeframes**			
	Guide post	A rebuilding timeframe is specified for the stock that is the **shorter of 20 years or 2 times its generation time**. For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified that does not exceed **1 generation time** for the stock.
	Met?	**Yes / No**		**Yes / No**
Rationale		N/A		
b	**Rebuilding evaluation**			
	Guide post	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is **evidence** that the rebuilding strategies are rebuilding stocks, or it is **likely** based on simulation modelling, exploitation rates, or previous performance that they will be able to rebuild the stock within the **specified timeframe**.	There is **strong evidence** that the rebuilding strategies are rebuilding stocks, or it is highly likely based on simulation modelling, exploitation rates, or previous performance that they will be able to rebuild the stock within the **specified timeframe**.
	Met?	**Yes / No**	**Yes / No**	**Yes / No**
Rationale		N/A		
Draft scoring range		**N/A**		
Information gap indicator		**Information sufficient to score PI**		

PI 1.2.1 – Harvest strategy - UoA3 (BET)

<table>
<tr><td colspan="2">PI 1.2.1</td><td colspan="3">There is a robust and precautionary harvest strategy in place</td></tr>
<tr><td colspan="2">Scoring issue</td><td>SG 60</td><td>SG 80</td><td>SG 100</td></tr>
<tr><td rowspan="3">a</td><td colspan="4">Harvest strategy design</td></tr>
<tr><td>Guide post</td><td>The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80.</td><td>The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80.</td><td>The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1/PI 1.1.1A SG80.</td></tr>
<tr><td>Met?</td><td>Yes</td><td>Yes</td><td>Yes</td></tr>
<tr><td colspan="2">Rationale</td><td colspan="3">The Harvest strategy is a combination of monitoring, stock assessment, harvest control rules (HCRs) and management actions. A summary of the IATTC elements are indicated bellow:

• Data collection programme through Resolution C-03-05.
• Stock assessment and the provision of advice.
• Resolution C-21-04 on the conservation of tropical tuna in the IATTC area. The main conservation measure established by the IATTC for bigeye in Resolution C-21-04 that establishes a multi-annual management measure for tropical tunas in the eastern Pacific Ocean during 2022-2024 calls for:

- A 72-day closure for purse seiners greater than 182 tons capacity through 2024.
- Additional days of closure for vessels exceeding a particular annual bigeye catch limit (i.e. 8 additional days in 2022 if a vessel has exceeded 1200 tons in 2017-2019, and 10-13-16-19-22 additional days in 2023-2024 if a vessel has exceeded 1200-1500-1800-2100-2400 tons, respectively, in previous year.
- Strengthen the monitoring and control system for tropical tuna species (particularly bigeye) catches through on-board observers, logbooks, port sampling and information from tuna processing facilities to control individual vessel bigeye catches.
- A seasonal closure of the purse seine fishery in an area known as "El Corralito", west of the Galapagos Islands, where catch rates of small bigeye are high.
- A full retention requirement for all purse seine vessels regarding bigeye, skipjack and yellowfin tunas.
- Bigeye catch limits for the main longline fishing nations.
- Limits on the number of active FADs that each purse seiner can have at any time, ranging from 66 FADs/vessel for the smallest ones to 400 FADs/vessel for Class 6 vessels (1,200 m3 capacity). These ranges will decrease to 64 to 340 in 2023 and 50 to 340 in 2024.
- All purse seines are also required to not deploy FADs 15 days before the selected closure period and Class 6 vessels to recover within 15 days prior to the start of the closure period a number of FADs equal to the number of FADs set upon during that same period.
- And in order to support the scientific analysis of FAD fisheries, the measure requires that CPCs or vessels report daily information on all active FADs (position and echosounder biomass data) as well as Vessel Monitoring System (VMS) data to the Secretariat.

We can conclude that the harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80, meeting SG60 and SG80.</td></tr>
<tr><td rowspan="2">b</td><td colspan="4">Harvest strategy evaluation</td></tr>
<tr><td>Guide post</td><td>The harvest strategy is likely to work based on prior</td><td>The harvest strategy may not have been fully tested but</td><td>The performance of the harvest strategy has been fully evaluated and evidence</td></tr>
</table>

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
		experience or plausible argument.	evidence exists that it is achieving its objectives.	exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	**Yes**	**No**	**No**
Rationale		At the SG60 level, SIb requires that the harvest strategy is **likely** to work based on prior experience or plausible argument, whereas at SG80, even if not fully tested, evidence is required to exist that the harvest strategy is achieving its objectives. The current harvest strategy explained in SGa can be viewed as being likely to work effectively to keep the stock above the limit reference point and around the target **meeting SG60**. However, the new measures implemented to address the increasing trend in the number of sets on floating objects including an increased number of closure days for vessels that exceed annual BET catch thresholds (IATTC 2021; Resolution C- 21-04), prevent reaching the conclusion that the new measures are being effective in reducing the risk on the stock to be driven to undesirable levels relative to the reference points. SG80 cannot be met.		
c	**Harvest strategy monitoring**			
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	**Yes**		
Rationale		Monitoring is in place. Data are collected to estimate management quantities, which indicates whether the harvest strategy is working or not, **meeting SG60**.		
d	**Harvest strategy review**			
	Guide post			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			**No**
Rationale		C-20-06 required a review of the harvest strategy annually (para. 21). IATTC scientific staff recommend that the provisions of C-17-02, rolled over into C-20-06 for 2021, be maintained in the meantime. Because the harvest strategy was not fully reviewed, SG100 is not met.		
e	**Shark finning**			
	Guide post	There is a **high degree of certainty** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	**NA**	**NA**	**NA**
Rationale		The target stock is not a shark.		
f	**Review of alternative measures**			
	Guide post	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	Met?	**NA**	**NA**	**NA**

PI 1.2.1	There is a robust and precautionary harvest strategy in place
Rationale	This fishery targets bigeye specifically, and there are no requirements such as minimum or maximum landing sizes or quotas which could lead to any of this catch being unwanted. This PI is not scored.
References:	
C-13-01; C-16-02; C-17-01; C-17-02	
Draft scoring range	**60-79**
Information gap indicator	**Information sufficient to score PI**

PI 1.2.2 – Harvest control rules and tools - UoA3 (BET)

PI 1.2.2		There are well-defined and effective HCRs in place		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**HCRs design and application**			
	Guide post	**Generally understood** HCRs are in place **or available** that are **expected** to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	**Well defined** HCRs are **in place** that **ensure** that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock **fluctuating around** a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock **fluctuating at or above** a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, **most** of the time.
	Met?	**Yes**	**Yes**	**No**
Rationale		The HCR for EPO tropical tunas is set out in Res. C-16-02, as follows: • If the probability that F>Flim is >10%, management measures shall be established such that there is at least a 50% probability that F will reduce to FMSY or below, and with a probability of <10% of F>Flim. • If the probability that B<Blim is >10%, management measures shall be established such that there is at least a 50% probability that B will recover to BMSY or above, and with a probability of <10% that B will decline to <Blim within two generations or 5 years, whichever is greater. There is a well-defined HCR, its application to bigeye was suspended 2018-2019 due to the lack of appropriate indicators produced from stock assessments. While the stock assessment has been successfully reviewed and revised for 2020, the status quo has been maintained with a roll-over of the 2017 resolution (C-1702 to C-20-06). Considering that a precautionary well-defined HCR is being applied that is expected keep the stock fluctuating around or above MSY and to reduce exploitation as the stock approaches its PRI, and it is in place, **SG60 and SG80 are met**.		
b	**The robustness of HCRs to uncertainty**			
	Guide post		The HCRs are likely to be robust to the main uncertainties.	The HCRs take account of a **wide** range of uncertainties including the ecological role of the stock, and there is **evidence** that the HCRs are robust to the main uncertainties.
	Met?		**Yes**	**Yes**
Rationale		The stock assessments updated in 2020 included a risk assessment carried out for bigeye tuna that provided parameters suitable for the HCR and conducted a decision analysis to guide decision-making under risk. The HCR was applied with a robust risk-based approach, and together with MSE testing, this indicates that main uncertainties are being addressed. On this basis, **SG80 is met.**		
c	**Evaluation of HCRs**			
	Guide post	There is **some evidence** that tools used or **available** to implement HCRs are appropriate and effective in controlling exploitation.	**Available evidence indicates** that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	**Evidence clearly shows** that the tools in use are effective in achieving the exploitation levels required under the HCRs.
	Met?	**Yes**	**Yes**	**No**

Rationale	The tools to implement the HCR are set out in Res. C-17-02. The seasonal closure as the key tool selected by IATTC are adjusted according to Fmult (FMSY/F) and other factors. Although the HCR was not applied in 2018, the 2020 stock assessment suggested that the duration of the closure was appropriate, although risks are clearly higher for bigeye than yellowfin, and further interventions may be required. There is provision for review and adjustment according to outcome. On that basis, the available evidence indicates that the tools are likely to be effective controlling exploitation rates and so **SG60 and SG80 are met**.
Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

PI 1.2.3 – Information and monitoring - UoA3 (BET)

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Range of information**			
	Guide post	**Some** relevant information related to stock structure, stock productivity, and fleet composition is available to support the harvest strategy.	**Sufficient** relevant information related to stock structure, stock productivity, fleet composition, and other data are available to support the harvest strategy.	A **comprehensive range** of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals, and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	**Yes**	**Yes**	**No**
Rationale		Sufficient information (on stock structure, stock productivity, fleet composition), is available to monitor and assess stock status including reporting and size-frequency sampling by each fleet and catch-per-unit-effort data from these fleets. There is a long history of biological and environmental research on EPO tuna stocks, and considerable environmental information. Overall, these data are sufficient for stock assessments to monitor status and mortality rates to support a harvest strategy, meeting **SG60 and SG80**.		
b	**Monitoring**			
	Guide post	Stock abundance and UoA removals are monitored and **at least 1 indicator** is available and monitored with sufficient frequency to support the harvest strategy.	Stock abundance and UoA removals are **regularly monitored at a level of accuracy and coverage consistent with the harvest strategy**, and **1 or more indicators** are available and monitored with sufficient frequency to support the harvest strategy.	**All information** required by the harvest strategy is monitored with high frequency and a high degree of certainty, and there is a good understanding of the inherent **uncertainties** in the information (data) and the robustness of assessment and management in dealing with this uncertainty.
	Met?	**Yes**	**Yes**	**No**
Rationale		Stock abundance and fishery removals through both Electronic Monitoring (EM) systems and observer data are regularly monitored at a level of accuracy and coverage consistent with the HCR, and indicators of catch and effort are available and monitored with sufficient frequency to support the HCR, including annual updates of the stock assessment. In addition, there is observer data which provides discard estimates. On this basis, data are sufficient for the requirements of the harvest strategy; **SG60 and SG80 are met**.		
c	**Comprehensiveness of information**			
	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		**Yes**	
Rationale		There has been an IATTC observer program since 1993 for larger vessels. Catches are reasonably well monitored and are sufficient for stock assessment. The level of monitoring is sufficient for the harvest strategy, and therefore **meets SG80**.		
Draft scoring range		**≥80**		

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring issue		SG 60	SG 80	SG 100
a	**Range of information**			
	Guide post	**Some** relevant information related to stock structure, stock productivity, and fleet composition is available to support the harvest strategy.	**Sufficient** relevant information related to stock structure, stock productivity, fleet composition, and other data are available to support the harvest strategy.	A **comprehensive range** of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals, and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	**Yes**	**Yes**	**No**
Rationale		Sufficient information (on stock structure, stock productivity, fleet composition), is available to monitor and assess stock status including reporting and size-frequency sampling by each fleet and catch-per-unit-effort data from these fleets. There is a long history of biological and environmental research on EPO tuna stocks, and considerable environmental information. Overall, these data are sufficient for stock assessments to monitor status and mortality rates to support a harvest strategy, meeting **SG60 and SG80**.		
b	**Monitoring**			
	Guide post	Stock abundance and UoA removals are monitored and **at least 1 indicator** is available and monitored with sufficient frequency to support the harvest strategy.	Stock abundance and UoA removals are **regularly monitored at a level of accuracy and coverage consistent with the harvest strategy**, and **1 or more indicators** are available and monitored with sufficient frequency to support the harvest strategy.	**All information** required by the harvest strategy is monitored with high frequency and a high degree of certainty, and there is a good understanding of the inherent **uncertainties** in the information (data) and the robustness of assessment and management in dealing with this uncertainty.
	Met?	**Yes**	**Yes**	**No**
Rationale		Stock abundance and fishery removals through both Electronic Monitoring (EM) systems and observer data are regularly monitored at a level of accuracy and coverage consistent with the HCR, and indicators of catch and effort are available and monitored with sufficient frequency to support the HCR, including annual updates of the stock assessment. In addition, there is observer data which provides discard estimates. On this basis, data are sufficient for the requirements of the harvest strategy; **SG60 and SG80 are met**.		
c	**Comprehensiveness of information**			
	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		**Yes**	
Rationale		There has been an IATTC observer program since 1993 for larger vessels. Catches are reasonably well monitored and are sufficient for stock assessment. The level of monitoring is sufficient for the harvest strategy, and therefore **meets SG80**.		
Information gap indicator		**Information sufficient to score PI**		

PI 1.2.4 – Assessment of stock status - UoA3 (BET)

PI 1.2.4		There is an assessment of the stock status		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Appropriateness of assessment to stock under consideration**			
	Guide post		The assessment is appropriate for the stock and for the harvest strategy.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?		**Yes**	**No**
Rationale		The assessment was benchmarked in 2016 and 2020. The assessment uses an integrated statistical age-structured stock assessment model (Stock Synthesis). The stock assessment requires substantial amounts of information, including data on retained catches, discards, indices of abundance (CPUE), and the size compositions of the catches of the various fisheries. Assumptions have been made about processes such as growth, recruitment, movement, natural mortality and stock structure. The 2020 assessment developed alternative stock hypotheses in a hierarchical risk framework. The results from the different models are combined in a risk analysis to provide management advice. Notwithstanding the problems of the stock assessment to explain observations, it is designed to be appropriate for the stock (model structure and the ability to use the available data) and derives information that can be used in the harvest control rule. **This meets SG80**.		
b	**Assessment approach**			
	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	
	Met?	**Yes**	**Yes**	
Rationale		The bigeye stock assessments have estimated stock status in relation to the MSY-related reference points. **SG60 and SG80 are met**.		
c	**Uncertainty in the assessment**			
	Guide post	The assessment **identifies major sources** of uncertainty.	The assessment **takes uncertainty into account**.	The assessment evaluates stock status relative to reference points in a **probabilistic** way.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		In 2020, a risk analysis was conducted for bigeye to evaluate several management quantities related to the IATTC HCR. As a result, stock status was presented as probabilities and a decision analysis was used to determine best management action to limit risks. This approach not only takes into account uncertainty in evaluating stock status but attempts to account for uncertainty in a fully probabilistic way, meeting **SG60, SG80 and SG100**.		
d	**Evaluation of assessment**			
	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			**No**

Rationale		The 2020 benchmark assessment, in response to external reviews, used fourteen reference models in the assessment within a hierarchical framework that addressed three major uncertainties: a) the apparent regime shift in recruitment (R shift), b) the misfit to the length-composition data for the longline fishery that is assumed to have asymptotic selectivity, and c) the steepness of the stock-recruitment relationship. This, together with various sensitivity analyses, rigorously explored a wide range of alternative hypotheses. However, having been tested, it is not clear that the assessment is robust and instead a decision analysis has been used to manage the risks. Because the stock assessment is not robust, SG100 is not met		
e	**Peer review of assessment**			
	Guide post		The assessment of stock status is subject to peer review.	The assessment has been **internally and externally peer** reviewed.
	Met?		**Yes**	**Yes**
Rationale		Scientific Advisory Committee provides internal review of stock assessments each year; the SAC reports show extensive discussion on model inputs, output uncertainties, stock structure and data gaps. This indicates that the assessments are subject to routine peer review, so SG80 is met. The 2017 benchmark assessments for yellowfin and bigeye were subject to two external reviews each to address significant structural problems in the models which led to the rejection of the 2018 scientific advice and reliance on empirical indicators for advice. Benchmark assessments were completed in 2020. Because IATTC periodically convenes external expert panels to peer review stock assessments, SG100 is met.		
Draft scoring range		**≥80**		
Information gap indicator		**Information sufficient to score PI**		

7.6. Principle 2

7.6.1. Principle 2 background

7.6.1.1. UoA catch composition: species assignments to MSC P2 categories

Primary species (MSC Component 2.1) are defined as follows:

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

Secondary species (MSC Component 2.2) are defined as follows:

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

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

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

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

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

I) **Sources of information**

a) Catch data from the electronic logbooks

Data from logbooks have been considered. The pre-assessment includes 5 vessels in the proposed UoA, of which two are new entrants in the Pacific, and therefore, there are no relevant data available for this pre-assessment. Of the remaining three vessels that have had fishing activities in the EPO (Eastern Pacific Ocean), the team has received data from 1 trip for Ría de Aldan in 2024 and two trips for Belle Rive in 2024 as well. Therefore, most of the data used in this analysis comes from the vessel Doña Roge (**Table 7.5.1.1.1**), which provided electronic logbook data from 2019 to 2024.

Table 7.5.1.1.1. Catch data from the client group – Vessel Don Roge

Gear type	Type of set	Year	SKJ (t)	YFT (t)	BET (t)
Purse seine (UoA 1 to 3)	No FAD	2019	1932	96	0
		2020	2397	97	0
		2021	1079	76	0
		2022	69	0	0
		2023	359	141	0
		2024	54	227	0
	FAD	2019	868	198	32
		2020	854	127	45
		2021	977	51	15
		2022	618	8	0
		2023	359	141	0
		2024	954	227	60
	Dolphins sets	2019	0	2	0
		2020	0	2	0
		2021	0	97	0
		2022	0	0	0
		2023	35	878	0
		2024	4	227	0
		Total (t)	**10559**	**2595**	**152**

b) Observers' data from IATTC

Catch data for purse seine vessels flagged to Ecuador within the Inter-American Tropical Tuna Commission (IATTC) area for species such as bigeye tuna, yellowfin tuna, and albacore varies annually. While specific annual figures for 2019-2024 were not fully accessible, there are notable trends and practices relevant to Ecuador's fleet.

The information on IATTC data base showed that Ecuador's Purse Seine Fleet is one of the largest fleets in the Eastern Pacific Ocean (EPO) and is known for extensive use of Fish Aggregating Devices (FADs). This fleet is significant in the IATTC-managed tuna fishery, contributing to substantial catches of tropical tuna species.

General Catch Trends showed the following information:

Bigeye Tuna: Retained purse seine catches in the EPO have fluctuated. The introduction of FADs since 1993 boosted catches from 5,000 metric tons annually to peaks between 44,000 and 95,000 metric tons.

Yellowfin Tuna: Catches averaged around 233,000 metric tons annually for purse-seine and pole-and-line fisheries in previous decades, with slight increases observed more recently

Albacore Tuna: This species is typically less significant in the purse seine fisheries compared to bigeye and yellowfin tuna, with most catches occurring in the Northern Pacific through longline methods rather than purse seine

Data on Ecuador's purse seine fleet specifically includes observations that catches per vessel are lower compared to other fleets due to smaller vessel capacities.

On the other hand, focusing on non-target species and marine mammals interactions under AIDCP agreement, independent observer coverage on the UoA vessels is 100%, as required by the AIDCP for vessels over 363 metric tons under the 1992 La Jolla Agreement (IATTC, 1992).

The IATTC Scientific and Enforcement Program, administered by the IATTC for the AIDCP, applies to purse-seine vessels with carrying capacity greater than 363 metric tons. Its primary purpose is to monitor the incidental catch of dolphins in the purse-seine tuna fishery. The data collected are used to determine whether a Dolphin Mortality Limit (DML) has been exceeded and serve scientific and research purposes while also monitoring compliance with IATTC management and conservation measures. Information about the interactions with the main species is reported in the **Table 7.5.1.1.2**.

Table 7.5.1.1.2. Percentages of sets with no dolphin mortalities, with major gear malfunctions, with net collapses, with net canopies, average times of backdown (in minutes), and average number of live dolphins left in the net at the end of backdown. 1986-2008 data are from trips observed by the IATTC program only; data after 2008 include trips covered by national programs.

	Sets with zero mortality (%)	Sets with major malfunctions (%)	Sets with net collapse (%)	Sets with net canopy (%)	Average duration of backdown (minutes)	Average number of live dolphins left in net after backdown
1986	38.1	9.5	29.0	22.2	15.3	6.0
1987	46.1	10.9	32.9	18.9	14.6	4.4
1988	45.1	11.6	31.6	22.7	14.3	5.5
1989	44.9	10.3	29.7	18.3	15.1	5.0
1990	54.2	9.8	30.1	16.7	14.3	2.4
1991	61.9	10.6	25.2	13.2	14.2	1.6
1992	73.4	8.9	22.0	7.3	13.0	1.3
1993	84.3	9.4	12.9	5.7	13.2	0.7
1994	83.4	8.2	10.9	6.5	15.1	0.3
1995	85.0	7.7	10.3	6.0	14.0	0.4
1996	87.6	7.1	7.3	4.9	13.6	0.2
1997	87.7	6.6	6.1	4.6	14.3	0.2
1998	90.3	6.3	4.9	3.7	13.2	0.2
1999	91.0	6.6	5.9	4.6	14.0	0.1
2000	90.8	5.6	4.3	5.0	14.9	0.2
2001	91.6	6.5	3.9	4.6	15.6	0.1
2002	93.6	6.0	3.1	3.3	15.0	0.1
2003	93.9	5.2	3.5	3.7	14.5	<0.1
2004	93.8	5.4	3.4	3.4	15.2	<0.1
2005	94.9	5.0	2.6	2.7	14.5	<0.1
2006	93.9	5.7	3.3	3.5	15.8	<0.1
2007	94.2	5.1	1.6	3.4	15.2	<0.1
2008	92.4	4.9	2.9	3.7	16.1	0.1
2009	93.3	5.2	1.8	3.1	16.7	<0.1
2010	94.1	4.7	1.3	2.4	16.2	<0.1
2011	94.0	4.1	1.9	2.1	16.3	<0.1
2012	94.5	4.3	1.9	1.5	16.5	<0.1
2013	95.4	4.2	1.3	1.3	15.4	<0.1
2014	95.5	3.7	1.3	1.3	16.2	<0.1
2015	96.4	4.3	1.1	1.2	15.4	<0.1
2016	96.4	3.8	0.9	0.9	15.2	<0.1
2017	96.2	3.6	1.0	1.0	15.9	<0.1
2018	95.8	3.3	0.8	1.5	17.3	<0.1
2019	95.8	4.1	1.1	1.1	16.6	<0.1
2020	96.5	3.9	0.3	0.9	17.0	0
2021	96.5	3.5	0.7	0.8	17.0	0
2022	96.0	3.3	0.3	1.3	18.1	0
2023	96.2	3.4	0.5	1.1	17.4	0

The table displays a clear decline in interactions with dolphins, which is a positive trend. This observation will be taken into account during the pre-assessment, particularly when scoring the ETP components.

However, a precautionary approach will be adopted due to the lack of comprehensive and direct data from the specific fleet under evaluation.

c) Other fisheries (overlapping fisheries)

Additionally, comparisons were made with other certified fisheries such as Eastern Pacific Ocean tropical tuna - purse seine (TUNACONS) fishery and Atún Sostenible EPO Panamá Tuna Fishery to check whether the species list could be more diverse than those presented by other MSC-certified fisheries. Although the team does not have further data at the time of drafting this pre-evaluation, it should be emphasized that, while the list is representative of the types of catches from these vessels in the EPO area, the percentages and, therefore, the species classification could change if data from the other vessels in the UoAs were available. (**Table 7.5.1.1.3**).

Table 7.5.1.1.3. Scoring Elements considered in Overlapping Fisheries: Analysis incorporating logbook and observer Data from Tunacons and Atún Sostenible Certified Vessels

Component	Scoring elements	Designation	Data-deficient
Principle 1 & 2	Yellowfin tuna	Target and Primary Main	No
Principle 1 & 2	Skipjack tuna	Target and Primary Main	No
Principle 2	Bigeye tuna	Primary Minor	No
Principle 2	Mahi mahi	Secondary minor	No
Principle 2	Bullet tuna	Secondary minor	No
Principle 2	Black skipjack	Secondary minor	No
Principle 2	Dolphin fish	Secondary minor	No
Principle 2	Wahoo	Secondary minor	No
Principle 2	Spotted oceanic triggerfish	Secondary minor	No
Principle 2	Bony fish spp	Secondary minor	No
Principle 2	Barbu	Secondary minor	No
Principle 2	Rainbow runner	Secondary minor	No
Principle 2	Bluestriped chub	Secondary minor	No
Principle 2	Amber jack	Secondary minor	No
Principle 2	Brassy chub	Secondary minor	No
Principle 2	Mackerel scad	Secondary minor	No
Principle 2	Bigeye trevally	Secondary minor	No
Principle 2	Common trigger fish	Secondary minor	No
Principle 2	Shorefishes	Secondary minor	No
Principle 2	Belonidae sp	Secondary minor	No
Principle 2	Offshore spotted dolphin – Northeastern	ETP	No
Principle 2	Offshore spotted dolphin – Western-Southern	ETP	No
Principle 2	Spinner dolphin – Eastern	ETP	No
Principle 2	Spinner dolphin – Whitebelly	ETP	No
Principle 2	Common dolphin – Northern	ETP	No

Component	Scoring elements	Designation	Data-deficient
Principle 2	Common dolphin – Central	ETP	No
Principle 2	Oceanic whitetip shark	ETP	No
Principle 2	Silky Sharks	ETP	No
Principle 2	Chilean devil ray	ETP	No
Principle 2	Spinetail mobula	ETP	No
Principle 2	Smoothtail (Munk's) mobula	ETP	No
Principle 2	Bentfin devil ray	ETP	No
Principle 2	Olive Ridley turtle	ETP	No
Principle 2	Green turtle	ETP	No
Principle 2	Loggerhead turtle	ETP	No
Principle 2	Hawsbill turtle	ETP	No
Principle 2	Seabirds	ETP	No
Principle 2	Epipelagic zone	Habitat	No
Principle 2	Physical and trophic factors	Ecosystem	No

The scoring elements considered in overlapping fisheries were based on a thorough analysis of available logbook and observer data from vessels certified under Tunacons and Atún Sostenible. Since the fishing grounds and operational areas of these fleets are similar to those under assessment, the information from these vessels offers valuable insights into the practices and impacts of the fisheries in question. Although the fleet being assessed does not provide comprehensive data directly, the use of data from these certified vessels ensures that a precautionary approach is taken. This data serves as a relevant proxy, allowing for a more informed analysis when scoring the non-target species and ETP components and evaluating the environmental impact of the fishery.

Nevertheless, this will be flagged throughout the report to ensure the client works on acquiring catches data from observer and logbook for future evaluation processes. Catch data for the fishery were provided to the assessment team by the client (**Table**).

II) P2 species classification following MSC requirements

Given the limited independent coverage and logbook data available for this pre-assessment, the assessment team has adopted a precautionary approach. The primary analysis was conducted using data from the vessel Dona Roque. However, to ensure that no relevant species in the harmonized and overlapping fisheries were overlooked, additional information sources were incorporated.

These sources include:

a) Logbook data from Dona Roge and few trips from other vessels.
b) IATTC and AIDCP Data: General catch composition description and relevant information on dolphin interactions and other sensitive ETP species.
c) Overlapping Fisheries Data: Scoring elements from other certified fisheries, specifically Atún Sostenible and Tunacons.

As a result, the primary data sources—logbook data AIDCP data, and scoring elements from the overlapping fisheries—have been used to complement the P2 analysis. With the source b) and c) the majority of the weight has been given to the ETP species and secondary species analysis, ensuring a comprehensive and precautionary evaluation.

Table 7.5.1.1.4 is a summary of the species considered and the designation

Table 7.5.1.1.4. Data from the vessel Dona Roge, part of the client group fleet reported by the client group between 2019- 2024. (Source: client group).

Scientist name	Common name	MSC designation	Retained catches	Justification	CITES listing
Katsuwonus pelamis	Skipjack tuna	Primary main	12 410 t	>76%	No
Thunus obesus	Bigey tuna	Primary minor	264 t	<1.8%	No
Thunnus albacares	Yellowfin tuna	Primary main	3 660 t	>22.4%	No
Acanthocybium solandri	Wahoo	Secondary minor	<10 t	<5%	No
Coryphaena hippurus	Mahi mahi	Seconday minor	<10 t	<5%	No
Macaira indica	Black marlin	Secondary minor	<10 t	<5%	No
Auxis thazard	Frigate tuna	Secondary minor	<10 t	<5%	No
Euthynnus lineatus	Black skipjack	Secondary minor	<5 t	<5%	No
Carcharhinus falciformis	Silky shark	ETP	0	C-21-06, C-19-05, C-16-06, C-05-03	Appendix II
Mobula thurstoni	Smoothtail Devil Ray	ETP	0	IATTC C-15-04	Appendix II
Eretmochelys imbricata	Hawksbill sea turtle	ETP	0	C-19-06	Appendix I
Sphyrna lewini	Scalloped hammerhead	ETP	0	C-05-03	Appendix II
Sphyrna zygaena	Smooth hammerhead	ETP	0	C-05-03	Appendix II
Lepidochelys olivácea	Olive ridley sea turtle	ETP	0	C-19-06	Appendix I

7.6.1.2. Primary species impacted by the UoA

As discussed above, the assessment team has analysed which species are major or minor primary species according to each UoA. Following the information provided by the Doña Roge vessel (**Table 7.5.1.1.4**), the main primary species will be considered the target species when they are not defined as target species in the UoAs. Therefore, for the UoAs targeting yellowfin tuna, the primary species will be bigeye and skipjack, and the same applies to the other two UoAs. The only main primary species across all UoAs, when no specific target species are defined, will be skipjack and yellowfin. Bigeye tuna has not exceeded 5% of the average total catch from 2019 to 2024; therefore, it will be considered a minor species. A summary of the status of each primary species is provided below.

Outcome

Yellowfin Tuna: The last benchmark assessment conducted in 2020 indicates that the stock is being exploited sustainably under current fishing mortality levels, with spawning biomass above critical thresholds.

Bigeye Tuna: The 2024 assessment highlights very low probabilities of exceeding limit reference points for both fishing mortality and spawning biomass. The stock is considered to be managed sustainably with no immediate concerns regarding overfishing.

Skipjack Tuna: A benchmark assessment in 2024 suggests that fishing mortality is below the level corresponding to the target biomass proxy, and the spawning biomass remains above the required level. This indicates a healthy stock under current management.

Management of primary species

At the international level, several measures are defined to manage the primary species in tuna fisheries. These measures are detailed in IATTC Resolutions, which provide relevant tools for managing tuna stocks. The following resolutions are pertinent to Eastern Pacific Ocean (EPO) tuna fisheries, including the fishery under assessment. The assessment team has highlighted the most relevant resolutions for this fishery, though further details can be found on the IATTC website.

Resolution C-21-04 (Conservation measures for tropical tunas in the Eastern Pacific Ocean during 2022-2024):

- (Para. 3): Purse seine vessels must cease fishing in the Convention Area for 72 days, from July 29 to October 8, or from November 9 to January 19 the following year.
- (Para. 12): The 'corralito' area, west of the Galapagos Islands, where juvenile tunas are prevalent, is closed from October 9 to November 8 annually.
- (Para. 37): All skipjack, bigeye, and yellowfin tuna must be retained, except when unfit for human consumption or when there is insufficient well space on the final set of a trip.
- (Para. 43): Existing management measures will be evaluated based on stock assessment results and fishing activity levels, with further restrictions possible if necessary.

Resolution C-19-07 (Terms of reference for management strategy evaluation workshops)

- (Para. 1): Priority species include bigeye, yellowfin, and skipjack tuna.
- (Paras. 2-4): Workshops are to be conducted openly and transparently.
- (Paras. 8-11): The workshops will review and propose management objectives, including candidate reference points and harvest control rules (HCRs).

Resolution C-16-02 (Harvest control rules for tropical tunas: yellowfin, bigeye, and skipjack) amended by C-23-06

- (Para. 1): An interim limit reference point of F0.5R0 and S0.5R0, assuming steepness (h) = 0.75, and target reference points based on spawning biomass (Starget) or fishing mortality rate (Ftarget) to be maintained at SMSY and FMSY.
- (Para. 3): Establishes HCRs for the purse seine fishery based on stock status or mortality rates, with the goal of avoiding stock levels below F-based or S-based limit reference points, and ensuring restoration within two generations or five years, whichever is greater.

- (Paras. 4-5): IATTC staff will assess HCRs and alternatives to adopt a permanent HCR, ensuring compatibility with WCPFC management.

  Measures include in the amendment:

  - Applies provisional LRP and TRP definitions to all three tropical tuna species.
  - Applies interim harvest control rules to all three tropical tuna species.
  - Requires that the IATTC staff carry out additional assessments of the HCRs and alternatives to allow the Commission to adopt a permanent HCR.

Resolution C-14-02 (Amends Resolution C-04-06, establishment of vessel monitoring system [VMS]). Amended by C-23-11

- (Para. 1): Tuna-fishing vessels over 24 meters in length operating in the EPO must have a VMS.
- (Para. 2): The VMS must be capable of collecting positional information at least once every 6 hours.

  Measures include in the amendment:

  - Sets performance requirements for VMS units
  - Requires that the vessel master shall commence manual transmission of information if the satellite tracking device fitted prevents the reception of two consecutive transmissions. The device shall then be repaired or replaced within 30 days.

Resolution C-03-05 (Data provision)

- (Paras. 1-2): Annual submission of data, including total catch numbers and weights (if available), as well as fishing effort.

Resolution C-03-04 (At-sea reporting)

- (Paras. 1-2): Purse seine vessels must transmit weekly reports on tuna catch by species and set type.

Resolution C-02-03 (Capacity of the tuna fleet operating in the Eastern Pacific Ocean [revised])

- (Paras. 4-5): Sets 158,000 m^3 as the target fishing capacity for the purse seine fleet, using the Regional Vessel Register as the definitive list of authorized vessels.
- (Para. 7): New vessels are prohibited, except for those replacing vessels removed from the register to maintain capacity limits.

Resolution C-99-07 (Fish aggregating devices) amended by C-24-06

- (Para. 1): Prohibits transshipment by purse-seine vessels fishing for tuna, unless it takes place in port.
- Recommends that CPCs continue with scientific work established in accordance with C-99-07, including on the establishment of a maximum number of sets on floating objects which the EPO tuna fishery can support, and the impact of permanent or temporary closure of areas to the use of FADs.
- Encourages CPCs to initiate recovery programmes of dFADs through cooperative initiatives among fishing vessels operating in the EPO.

Information of primary species

The primary species identified in the fishery, including skipjack, yellowfin, and bigeye tuna, are closely monitored by IATTC. The IATTC's observer program is key in collecting data on these species, with countries submitting catch reports as part of the program's structure.

The IATTC's data collection program serves several critical functions to ensure high-quality data for these key tuna species. These tasks include:

1. Obtaining Statistical Records: The program collects detailed data on tuna fisheries directly from the fishing fleets and processing plants, ensuring comprehensive coverage of catch and effort data.

2. Processing Data and Reporting: The collected data is processed, and reports are prepared for use by IATTC. These reports are also provided in response to requests from Contracting Parties and Cooperating Parties (CPCs).

3. Providing Data for Stock Assessment: Data collected is crucial for assessing the impact of fishing activities on tuna stock abundance. This information is shared with the IATTC's Stock Assessment

Program and other research activities, enabling informed decisions on conservation and management strategies.

4. Activities related to the IATTC Regional Register of Vessels and its maintenance, including thelists and categories established in different resolutions.

This system helps support the sustainable management of tuna stocks in the Eastern Pacific Ocean (EPO), allowing IATTC to evaluate the effects of fishing on these species accurately and take timely, data-driven management actions.

Therefore, the data from fleet, observer and canneries are used to monitor and control those species. Further, the client has provided the assessment team with the information from the Doña Roge.

7.6.1.3. Secondary species impacted by the UoA

Using the logbook data from the Doña Roge vessel in **Table** the assessment team have categorised the following species as secondary species: Mahi mahi, Frigate tuna, Black skipjack, Black marlin, and Wahoo. For each species, the catch comprises less than 5% by weight of the total catch of all species by the UoA. As such these species are minor secondary species.

- Common dolphinfish, Mahi mahi (*Coryphaena hippurus*)

Common dolphinfishes are caught as bycatch in the tuna purse-seine fisheries, predominantly caught in sets on floating objects (97% of the total catch by weight). IATTC observers aboard large purse-seine vessels have collected data on bycatches of mahi mahi since 1993 and the records available for the studies done covering a period from 1993 to 2015. Bycatch data for smaller were not available, and therefore they were estimated by applying the catch rates per set of the large vessels (class 6) to the sets by the smaller vessels (23% of the total number of purse-seine sets).

The last stock assessment for mahi mahi (dorado) in the Eastern Pacific Ocean (EPO) by the IATTC has focused on various research activities and updates, especially concerning its genetic structure, catch data, and sustainability. According to recent reports, there has been significant progress in research on mahi mahi, although the stock remains unassessed with formal reference points.

Mahi mahi in the EPO is a valuable bycatch in the tuna purse-seine fishery, mainly in floating-object sets. The IATTC has been collecting bycatch data since 1993, and this information has been used to estimate stock levels. Genetic studies have indicated different population groups within the Pacific, although these populations are interconnected.

Ecuador and Peru have been central in mahi mahi research, especially with their joint efforts in tagging programs and other scientific initiatives, such as genomic studies to better understand stock distribution. The IATTC has supported these efforts through collaborations and has also noted the importance of ongoing work to refine stock assessments and improve data collection across the region.

In 2024, the latest updates to these efforts include more detailed genetic studies, assessments of fishing impacts, and ongoing evaluations of the stock status based on updated tagging data. While the fishery has historically faced challenges related to sustainability and data gaps, Ecuador's National Plan of Action for Mahi Mahi ("Plan Dorado") has led to improved management, monitoring, and regulatory enforcement, making it a model for other regions

- Frigate tuna (*Auxis thazard*)

Bullet and frigate tunas (Scombridae) are by far the most commonly reported forage species with estimated annual catches averaging 1,021 t from 1993–2022. However, their catches have declined from 1,921 in 2005 to 699 t in 2022 (**Figure 7.5.1.2.1**). Triggerfishes (Balistidae) and filefishes (Monacanthidae) are the second most commonly reported forage group with annual estimated catches averaging 262 t and totaling 545 t in 2022. Catches for this group peaked in 2004 at 922 t but have otherwise been variable.

Annual catches of sea chubs (Kyphosidae) have averaged 17 t, and have remained minimal with 22 t in 2022. Lastly, annual catches of the various species in the category 'epipelagic forage fishes' averaged 7

t with 15 t estimated to be caught in 2022. A total of 128 t of bullet and frigate tunas and 84 t of triggerfishes and filefishes caught in floating-object sets were reported by observers on the limited number of trips on small purse-seine vessels that carried an observer in 2022. Catches of all other species or species groups of small fishes were minimal (≤3 t). (**Figure**).

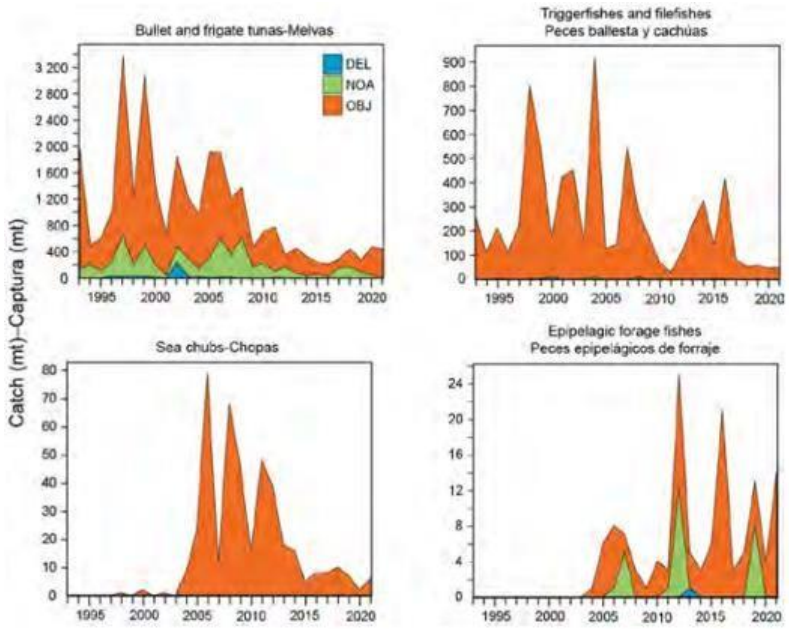


Figure 7.5.1.2.1. Estimated purse-seine catches in metric tons (t) of key species of small fishes in the eastern Pacific Ocean. Purse seine catches are provided for size-class 6 vessels with a carrying capacity >363 t (1993–2021) by set type: floating object (OBJ), unassociated tuna schools (NOA) and dolphins (DEL). Source IATTC SAC 13-03.

- Black skipjack (*Euthynnus lineatus*)

Data on catches of the principal species of tunas and of the genera *Thunnus*, *Katsuwonus Euthynnus*, and Sarda, and of billfishes in the *Istiophoridae* and *Xiphiidae* families, are reported in Document SAC-14-03. IATTC staff have developed the stock status of various species that accompany the main tuna catches. Recent cumulative catch data from 2024 show that black skipjack is part of the broader category of bycatch in the purse-seine fishery, with ongoing monitoring through the IATTC's data collection programs. However, unlike major tuna species, black skipjack does not currently have specific reference points for stock management, and its populations are considered to be stable, reflecting typical patterns for species caught incidentally. Due to the minimal catches by the fleet, it will not play a relevant role in the scoring of secondary species.

- Wahoo (*Acanthocybium solandri*)

In the EPO, wahoo is often caught incidentally in tuna fisheries, particularly by purse-seine vessels targeting tunas. However, the Inter-American Tropical Tuna Commission (IATTC) does not conduct specific stock assessments for wahoo in the EPO. Consequently, there are no established reference points or management measures tailored exclusively for this species within the IATTC framework. The lack of targeted assessments means that the current status of the wahoo stock in the EPO remains uncertain. This underscores the need for dedicated research and monitoring to better understand the population dynamics and ensure sustainable management of wahoo in the region. The catches of the UoAs are negligible and the team considers there is no impact on this stock.

- Black marlin (*Macaira indic*a)

In the EPO, it is primarily caught as bycatch in tuna longline and purse-seine fisheries, as well as in artisanal and recreational fisheries. The Inter-American Tropical Tuna Commission (IATTC) does not conduct specific stock assessments or establish reference points for black marlin in the region. Consequently, the current

stock status is uncertain, with no tailored management measures in place. The catches of the UoAs are negligible and the team considers there is no impact on this stock.

Management and information for secondary species

Information to assess secondary species comes from the same program described for primary species and therefore, the data from fleet, observer and canneries are used to monitor and control those species. Further, the client has provided the assessment team with the information from the logbooksand landing reports of the three vessels included in the assessment.

Along with other resolutions that focus on elements such as dolphins or marine mammals, the consolidated resolution on bycatch C-04-05 (Rev 2) [1]is considered to represent a strategy that is in place to manage the impact of the fishery on bycatch and to maintain the current very low level of impact. The resolution contains different measures that can be apply to the management of secondaryspecies as per MSC requirements. In the general section is stated:

- Require fishermen on purse-seine vessels to promptly release unharmed, to the extent practicable, all sharks, billfishes, rays, dorado, and other non-target species and
- Encourage fishermen to develop and use techniques and equipment to facilitate the rapid and safe release of any such animals.

Further, there are also measures focusing on sea turtle, sharks or rays. More details will be given in the scoring table. These measures and the resolution C-04-05 urge those governments with vessels covering the area to provide the tools to apply the resolution.

7.6.1.4. ETP species impacted by the UoA

The criteria for designating ETP species are set out in MSC Fisheries Standard v2.01 clause SA3.1.5, the team considered species protected under the following national legislation and/or international treaties to be ETP:

- CITES (Convention on International Trade in Endangered Species) Appendix I;
- IUCN Red List (vulnerable, endangered or critically endangered status) for species classified as“out-of-scope” (amphibians, reptiles, birds and mammals);
- Convention on Highly Migratory Species (CMS) Appendices I and II where binding agreementsare in place;
- National legal protections including sanctuaries within coastal state EEZs, and
- EPO CMMs that provide some measure of protection (i.e., a ban on landing).

The table below (**Table**) provides an overview of the ETPs that are most common in the area where fishing activities take place, and thus have been identified as potential species impacted by tuna fishing in the area.

Seabird species have not been listed because there may be more than 100 seabirds distributed in the area. However, purse seine fishing does not have high impacts on these birds, and Ecuador and Panama are within the ACAP agreements, so they are considered protected species. Further details will be provided in the scoring tables.

Table 7.5.1.3.1. Overview of the ETPs that are most frequently encountered in the fishing zone and are thus identified as potentially impacted species by tuna fishing and agreements. Additionally, it is identified the source of the information.

Species	IATTC	CITES	CMS	IUCN	Sources

[1] IATTC_mixed_Res_C-04-05-REV-2-Bycatch-Jun-2006.pdf

Oceanic whitetip shark	IATTC C-11-10	Appendix II	No status	Species is 'in scope' for MSC, so IUCN status is not relevant	c
Hammerhead shark spp	IATTC C-16-06	Appendix II: (CITES Appendices)	Appendix II: (CMS Appendices)	Species are 'in scope' for MSC, so IUCN status is not relevant	c
Thresher shark spp	IATTC C-16-05	Appendix II: (CITES Appendices)	Appendix II: (CMS Appendices)	Species are 'in scope' for MSC, so IUCN status is notrelevant	c
Mobulid spp	IATTC C-15-0	Appendix I: (CITES Appendices)	Appendix II: (CMS Appendices)	Species is 'in scope' for MSC, so IUCN status is not relevant.	b & c
Turtle spp. (Green, Hawksbill, Loggerhead,Olive ridley)	IATTC C04-05	Appendix I: (CITES Appendices)	Appendix I: (CMS Appendices)	Species is not in scope, so IUCN is potentially relevant. All listedas 'Endangered'	a & b
Dolphin spp. (Easternspinner, White belly spinner, Offshore spotted, Common)	Recognised under the AIDCPthrough the establishment ofDolphin Mortality Limits and associated measures	Appendix II: (CITES Appendices)	Appendix II: (CMS Appendices)	Eastern spinner – VU (Hammond et al. 2008), Spinner – LC (Braulik & Reeves 2018), Offshore spotted –LC (Kiszka & Braulik 2018), Common – LC (Braulik et al. 2021).	a & c
Seabirds	C-11-02	Depending on species	ACAP	Depending onspecies	c

The Bycatch database is a comprehensive collection of data on non-tuna species caught in tuna fisheries, focusing on the mortality of various marine fauna such as dolphins, turtles, sharks, billfish, rays, and seabirds. This data is gathered by IATTC using several forms, each dedicated to specific species or groups, such as the Marine Fauna Record (MFR) and separate records for dolphins, turtles, sharks, and billfish. The database stores these records in relational tables, which are linked together for analysis and used by IATTC staff to develop resolutions or provide scientific advice.

Key components of the database include:

1. Marine Fauna Record (MFR) – Contains data for non-tuna species not specifically tracked by other forms.
2. Marine Mammal Sighting and Set Record (MMSSR) – Focuses on dolphin interactions, including mortality and injuries.

3. Sea Turtle Record (STR) – Records data on sea turtle mortality.
4. Shark Record (RDT) – Tracks shark mortality and includes data on individual sharks (e.g., size and sex) and aggregated catch by size categories.
5. Billfish Record (BFR) – Similar to the shark record, but for billfish species.
6. Ray Record (RR) – Collects data on ray species, similar to sharks and billfish.

The database also includes derived tables that compile bycatch data based on species' mortality, expressed either by the number of individuals or by weight. Additionally, seabird sightings are recorded under the MFR but do not include mortality data, unlike the other species groups.

This structured system allows for detailed monitoring of bycatch impacts and supports conservation and management efforts by the IATTC.

Focusing on marine mammals, under the AIDCP (Agreement on the International Dolphin Conservation Program) the observer programs in various countries, such as Colombia (PNOC), Ecuador (PROBECUADOR), the European Union (PNOT), Mexico (PNAAPD), Nicaragua (PRONAON), Panama (PRONAOP), and Venezuela (PNOV), play a critical role in monitoring the tuna fisheries in the Eastern Pacific Ocean. These programs are responsible for deploying observers on fishing vessels to collect data on bycatch, fishing practices, and compliance with regulations.

Key points include:

- observers are required on 100% of trips made by purse-seine vessels with a carrying capacity of over 363 metric tons (Class 6 vessels). During the COVID-19 pandemic, exceptions were made, but this exemption ended in 2022, and since 2023, 100% observer coverage has been reinstated.
- Several countries, including Colombia, Ecuador, Mexico, Panama, and others, maintain national observer programs to monitor purse-seine vessels operating in the Agreement Area. In 2023, observers were deployed on 100% of 869 fishing trips made by Class-6 vessels from these countries. Additionally, 17 trips on smaller vessels were also observed either by requirement or voluntarily.
- In 2011, the IATTC signed a Memorandum of Cooperation (MOC) with the WCPFC (Western and Central Pacific Fisheries Commission) for cross-endorsement of observers, ensuring coordinated monitoring of vessels operating in both organizations' Convention Areas, particularly in high-seas areas.

This system ensures robust data collection and transparency for tuna fisheries, supporting sustainable management practices and compliance with conservation measures.

Improvements in fishing practices, such as fewer mechanical malfunctions and net collapses, have contributed to the decrease in dolphin mortality.

The areas where sets with dolphins occur are well-monitored and can be identified on IATTC maps, which display zones of higher fishing effort. This allows for a clear understanding of the areas with greater risk (**Figure 7.5.1.3.1**).

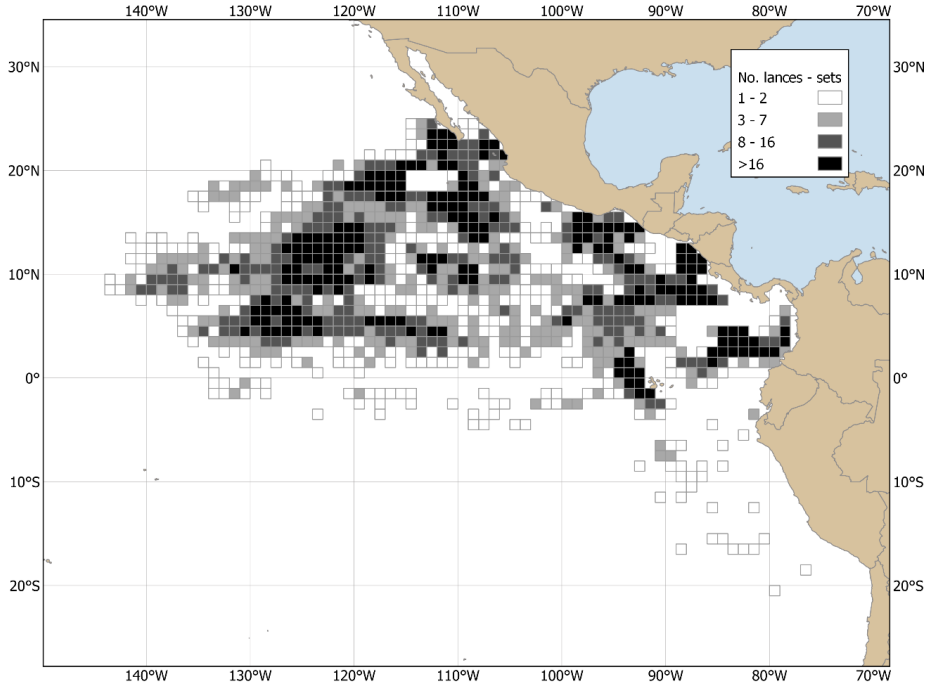


Figure 7.5.1.3.1. Spatial distribution of sets on tuna associated with dolphins in the Agreement Area, 2023. Source: AIDCP 49-02.

In the latest report from the AIDCP (49-02), dolphin mortality in the tuna fishery for 2023 was recorded at 828 animals, marking a decline compared to previous years. This represents a significant reduction in mortality, with the relative mortality rate remaining under 0.01 in all cases. This continued decrease is part of a long-term trend that reflects the effectiveness of conservation measures and improved fishing practices over the years (Table 7.5.1.3.2).

The report emphasizes that, despite fluctuations in the number of mortalities, efforts to mitigate dolphin deaths through better management of fishing methods have led to a steady decline in mortality rates. This includes strategies such as reducing mechanical malfunctions, net collapses, and improving the backdown maneuver, all of which have contributed to the reduction in dolphin deaths.

Table 7.5.1.3.21. Standard errors of annual mortality estimates of dolphins, by species and stock, for 1979-1994. There are no standard errors for 1995-2000 and after 2003 because the coverage was at or nearly at 100% during those years. Source: AIDCP 49-02.

Species and stock	Mortality	Population abundance	Relative mortality (%)
Especie y población	**Mortalidad**	**Abundancia de la población**	**Mortalidad relativa (%)**
Offshore spotted dolphin—Delfín manchado de altamar[1]			
Northeastern—Nororiental	115	911,177	0.01
Western/southern—Occidental y sureño	195	911,830	0.02
Spinner dolphin—Delfín tornillo[1]			
Eastern—Oriental	274	790,613	0.03
Whitebelly—Panza blanca	178	711,883	0.025
Common dolphin—Delfín común[2]			
Northern—Norteño	29	449,462	< 0.01
Central	26	577,048	<0.01
Southern—Sureño	7	1,525,207	<0.01
Other dolphins—Otros delfines[3]	4		
Total	**828**		

Sea turtles

Between 1993 and 2022, the IATTC recorded 21,850 interactions and 951 sea turtle mortalities, primarily involving olive ridley turtles (*Lepidochelys olivacea*), which are the most commonly caught species. Interactions were classified into categories, such as entangled, released unharmed, or observed but not involved in the set. Of these interactions, 168 occurred in 2022, with no recorded mortalities for this species in that year. The 2022 data also included interactions with eastern Pacific green, loggerhead, hawksbill, and leatherback turtles, but no mortalities were reported for these species (**¡Error! No se encuentra el origen de la referencia.**).

In the longline fishery, turtle bycatch occurs when turtles swallow hooks or become entangled in fishing lines. However, the data on turtle interactions and mortalities in longline fisheries are limited due to low observer coverage (generally around 5%), compared to 100% observer coverage on large purse-seine vessels. The observer data collected so far has been used to identify trends and challenges related to turtle bycatch, though the numbers are considered to be underreported due to the low coverage.

Several IATTC resolutions, particularly C-19-04, have been aimed at mitigating the impact of fishing activities on sea turtles, including safe handling and release protocols for turtles caught by purse-seine and longline gear. (SAC13-05 – Update)

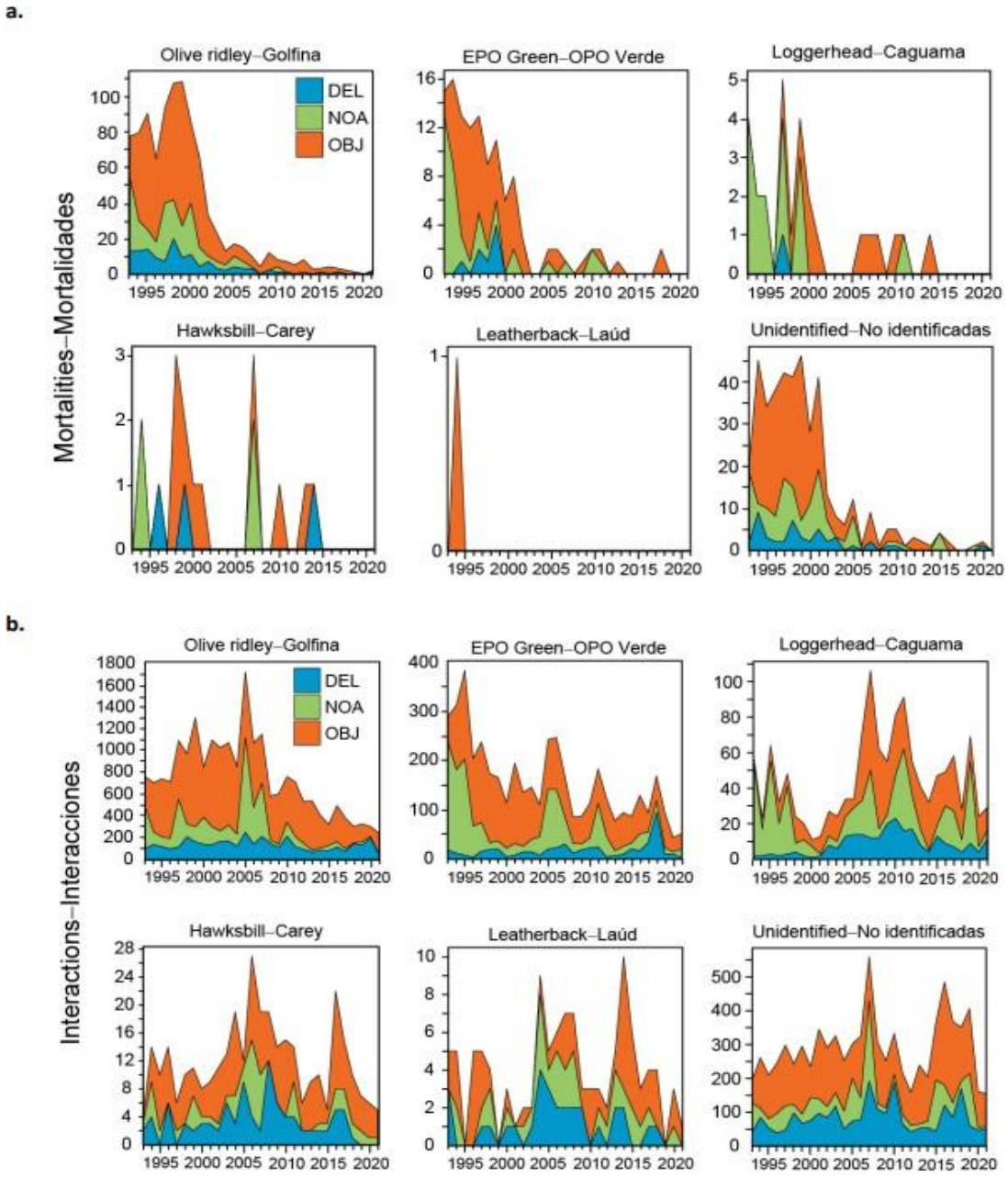


Figure 7.5.1.3.2. Estimated number of sea turtle a) mortalities and b) interactions by observers onboard large purse-seine vessels, 1993–2021, by set type (dolphin (DEL), unassociated (NOA), floating object (OBJ)) Source: SAC 13-10 IATTC

As mentioned earlier, various IATTC resolutions, most recently C-19-04, have been intended to mitigate fishing impacts on sea turtles and establish safe handling and release procedures for sea turtles caught by purse-seine and longline gear.

Seabirds

There are approximately 100 species of seabirds in the tropical EPO. Some of them associate with epipelagic predators, such as fishes (especially tunas) and marine mammals, near the ocean surface; for some, feeding opportunities are dependent on the presence of tuna schools feeding near the surface. Some seabirds, especially albatrosses and petrels, are caught on baited hooks in pelagic longline fisheries. The IATTC has adopted one resolution on seabirds (C-11-02); also, the Agreement on the Conservation of Albatrosses and Petrels (ACAP) and Birdlife International have updated their maps of seabird distribution in the EPO, and have recommended guidelines for seabird identification,

reporting, handling, and mitigation measures (SAC-05 INF-E, SAC-07-INF-C(d), SAC-08-INF-D(a), SAC- 08-INF-D(b), BYC-08 INF J(b)).

Sharks

Sharks are caught as bycatch in the EPO tuna purse-seine fisheries and are also targeted or caught incidentally in longline and multi-species fisheries operated by coastal nations. Stock assessments or status indicators (SSIs) are available for only four shark species in the EPO: silky shark (*Carcharhinus falciformis*), blue shark (*Prionace glauca*), shortfin mako (*Isurus oxyrinchus*), and common thresher (*Alopias vulpinus*). Whale shark interactions with the tuna purse-seine fishery in the EPO are discussed in document BYC-08 INF-A. The impacts of tuna fisheries on other shark species in the region remain unknown.

A quantitative vulnerability assessment of shark bycatch in both industrial and artisanal EPO fisheries, using the EASI-Fish methodology, was completed in 2022 and presented at SAC-13 (SAC-13-11). This assessment recorded 49 shark species interacting with the fisheries, with 32 species formally assessed for 2019. The analysis classified 20 species as "most vulnerable," including hammerhead sharks (four species), requiem sharks (ten species), threshers (two species), mesopelagic sharks (three species), as well as the commercially significant blue shark and shortfin mako. The remaining 12 species were either deemed "least vulnerable" (nine species) or "increasingly vulnerable" (three species). The report suggested further exploration of potential conservation and management measures (CMMs) to reduce fishing impacts on particularly vulnerable shark species, including the silky, thresher, and hammerhead sharks.

Catch data from 1993 to 2021 for sharks in the large-vessel purse-seine fishery and longline fisheries are available in the IATTC report SAC 13-10 IATTC. Key species caught include the smooth hammerhead (*Sphyrna zygaena*), pelagic thresher (*Alopias pelagicus*), and mako sharks (*Isurus spp.*). Average catch estimates for smooth hammerhead sharks in the purse-seine fishery were around 26 tons annually, with 13 tons reported in 2021, while in the longline fishery, the minimum reported catch averaged 958 tons (2006–2020), with 941 tons recorded in 2020. Pelagic thresher sharks were primarily caught in unassociated tuna school sets, with an average catch of 5 tons, and only 1 ton in 2021. Mako shark catch in the purse-seine fishery was lower, averaging 3 tons, with 2 tons reported in 2021.

The blue shark was the most frequently caught shark, with over 70,000 individuals reported caught in 2020, followed by the silky shark, which accounted for over 10,000 interactions.

These data are crucial for understanding the status of shark populations and the effectiveness of management measures aimed at minimizing bycatch in the EPO fisheries.

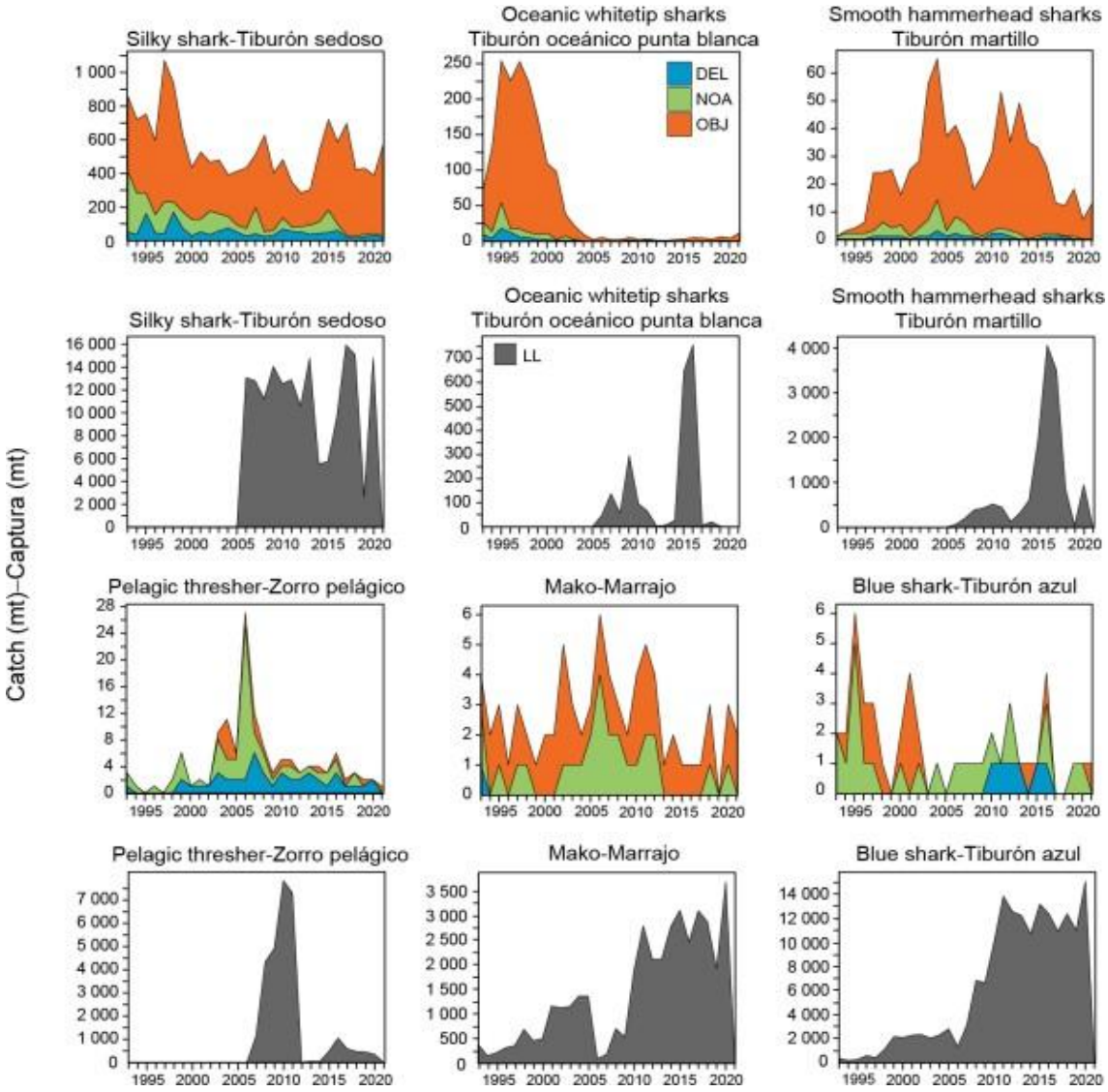


Figure 7.5.1.3.3. Estimated catches in metric tons (t) of key shark species in the eastern Pacific Ocean recorded by observers onboard large purse-seine vessels and minimum longline (LL) estimates of gross annual removals reported by CPCs (see section 2.2. for uncertainty in reporting of bycatch species caught by longline). Purse- seine catches are provided for size-class 6 vessels with a carrying capacity >363 t (1993–2021) by set type: floating object (OBJ), unassociated tuna schools (NOA) and dolphins (DEL). Longline catches (1993–2020) are minimum reported gross-annual removals that may have been estimated using a mixture of different weight metrics. Source: SAC 13-10 IATTC.

In the case of sharks, Table shows the data reported by Dona Roge for the period 2019 to 2023 with a few interactions reported and the status was noted as discarded.

Rays

The annual catches of manta rays (*Mobulidae*) and stingrays (*Dasyatidae*) in the EPO have been documented in both the large-vessel purse-seine (1993–2021) and longline fisheries (1993–2020). According to the data provided in Table J-5a and Figure J-4, manta rays and stingrays are predominantly caught by the purse-seine fishery, with only limited catches reported for the longline fishery, specifically for Munk's devil ray and some species of the Dasyatidae family. The longline catches included 6 tons of Munk's devil ray in 2009 and 118 tons in 2010, as well as a total of 15 tons of Dasyatidae spp. over five years, with half of that occurring in 2009.

The giant manta ray had the highest average catches in the purse-seine fishery, with an average of 19 tons, followed by the spinetail (14 tons) and smoothtail (8 tons) mobulid rays. Catches of these species in 2021 were reported as 15 tons for the giant manta, 7 tons for both the spinetail and smoothtail, and less than 1 ton for the smoothtail species. Pelagic stingrays were caught in much smaller quantities, averaging only 2 tons per year, with 2 tons recorded in 2021.

The catches of rays in the purse-seine fishery are more significant in unassociated sets, followed by dolphin-associated sets, and are lowest in floating-object sets. In contrast, the small purse-seine vessel fishery reported minimal catches (≤1 ton) for other ray species in 2021, according to the limited available observer data for that year.

These findings help to illustrate the patterns in bycatch of manta rays and stingrays, providing insights into fishing practices and the relative impact of different set types on ray species populations (**Figure 7.5.1.3.**).

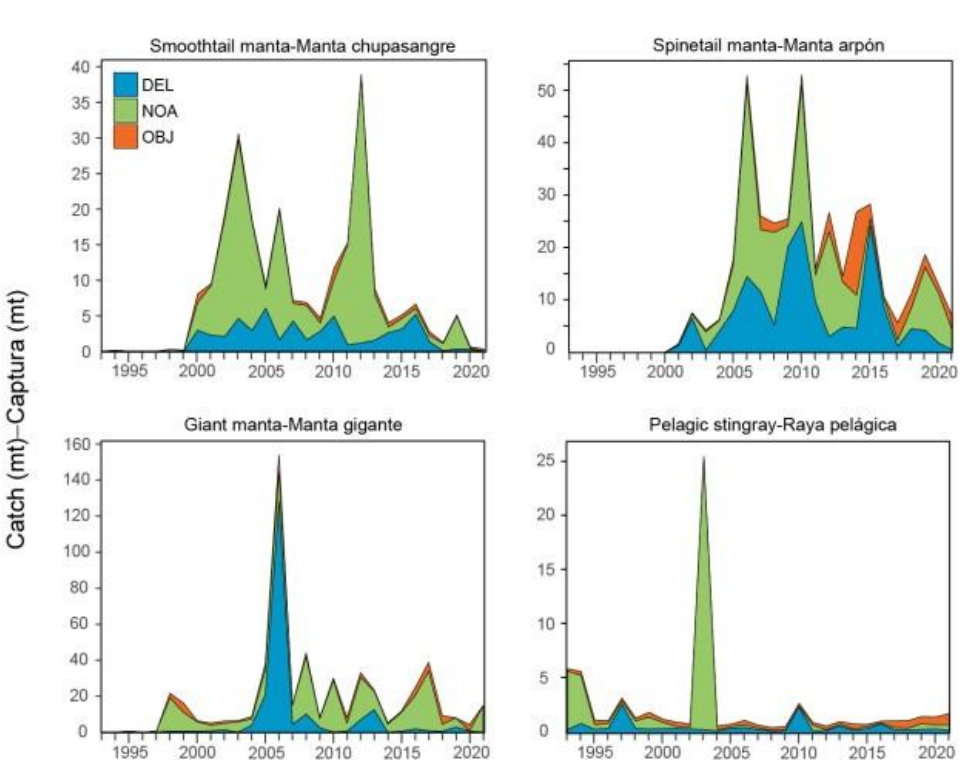


Figure 7.5.1.3.4. Estimated purse-seine catches in metric tons (t) of key species of rays in the Eastern Pacific Ocean. Purse seine catches are provided for size-class 6 vessels with a carrying capacity > 363 t (1993 – 2021) by set type: floating object (OBJ), unassociated tuna schools (NOA) and dolphins (DEL). Source SAC 13-10 IATTC.

Table also reported the interactions with rays in the period from 2019 to 2024.

Management of ETP species

The fishery management measures related to ETP species in the Eastern Pacific Ocean (EPO) focus on minimizing bycatch and ensuring the conservation of species like sea turtles, sharks, rays, and dolphins. Key resolutions under the Inter-American Tropical Tuna Commission (IATTC) and the Agreement on the

International Dolphin Conservation Program (AIDCP) lay out specific requirements for the purse-seine and longline fisheries. The more relevant are detailed below:

1. Sea Turtle Protection (Resolution C-19-04)

Purse-seine vessels are required to:

- Rescue sighted sea turtles from nets before entanglement.
- Release entangled turtles during net roll by hauling the net to a height of 2 meters and moving the main boom to facilitate safe release.
- Release live or dead turtles quickly if brought aboard, and attempt resuscitation for comatose turtles.

2. Shark Conservation (Resolution C-16-05)

For sharks, particularly silky and hammerhead sharks:

- The IATTC has developed a workplan to complete stock assessments for these species.
- Catch data for silky and hammerhead sharks must be collected and submitted to the IATTC.
- Safe release procedures for sharks caught by purse-seine vessels are mandatory, prohibiting gaffs or lifting sharks by inappropriate body parts.
- Specific attention is given to whale sharks, which must not be towed out of nets.

3. Mobulid Ray Conservation (Resolution C-15-04)

- Prohibition on retaining Mobulid rays (manta and mobula rays) for sale or consumption within the IATTC Convention Area.
- Release procedures for Mobulid rays must minimize harm, and observers are required to record the status of released rays (dead or alive).
- Developing countries may be exempt from these requirements for small-scale fisheries.

4. Oceanic Whitetip Shark Conservation (Resolution C-11-10)

- Prohibition on retaining oceanic whitetip sharks caught in fisheries under the IATTC.
- Safe release of oceanic whitetip sharks, with reporting of their release status (dead or alive) via observer programs.

5. Bycatch Reduction (Resolution C-04-05 Rev 3)

Purse-seine fisheries must:

- Release non-target species, including sharks, billfishes, rays, and dorado, unharmed to the extent possible.
- Develop techniques for the rapid and safe release of these species.

6. Dolphin Conservation (AIDCP)

The AIDCP focuses on reducing dolphin mortality in tuna purse-seine fisheries:

- Progressive reduction of dolphin mortalities with annual limits.
- Capture methods must be ecologically sound, and bycatch of non-target species should be minimized.
- Specific technical guidelines are provided to avoid high mortality during sets on large dolphin pods, requiring the use of speedboats for net towing, keeping nets open, and ensuring the safe release of dolphins if any risk of entanglement arises.

These resolutions are crucial in protecting ETP species by mandating safe release procedures, improving data collection on bycatch, and promoting best practices to minimize ecological impacts in the fisheries of the EPO.

7.6.2.Habitats

The fishery is a purse seine fishery that normally occurs away from the coast in deep, oceanic waters but also in Ecuador, Perú, Panama, Colombia and Costa Rica EEZs. There is never any intentional bottom contact, and the loss of a purse seine net that could result in accidental bottom contact is considered extremely unlikely.

The MSC Fisheries Standard v2.01 requires habitats interacting with the fishery to be defined as 'Commonly-Encountered', 'VME' or 'Minor', with definitions as given in **Table 7.6.2.1**.

Table 7.6.2.1. Habitat definitions as per the MSC Fisheries Certification Requirements v2.01.

FCR reference	Definition
SA3.13.3.1	A commonly encountered habitat shall be defined as a habitat that regularly comes into contact with a gear used by the UoA, considering the spatial (geographical) overlap of fishing effort with the habitat's range within the management area(s) covered by the governance body(s) relevant to the UoA.
SA3.13.3.2	A Vulnerable Marine Ecosystem (VME) shall be defined as is done in paragraph 42 subparagraphs (i)-(v) of the FAO Guidelines (definition provided in GSA3.13.3.2). This definition shall be applied both inside and outside EEZs and irrespective of depth.
GSA3.13.3.2	VMEs have one or more of the following characteristics, as defined in paragraph 42 of the FAO Guidelines: Uniqueness or rarity – an area or ecosystem that is unique or that contains rare species whose loss could not be compensated for by similar areas or ecosystems. Functional significance of the habitat – discrete areas or habitats that are necessary for survival, function, spawning/ reproduction, or recovery of fish stocks; for life-history stages (e.g., nursery grounds, rearing areas); or for ETP species. Fragility – an ecosystem that is highly susceptible to degradation by anthropogenic activities. Life-history traits of component species that make recovery difficult – ecosystems that are characterised by populations or assemblages of species that are slow growing, are slow maturing, have low or unpredictable recruitment, and/or are long-lived. Structural complexity – an ecosystem that is characterised by complex physical structures created by significant concentrations of biotic and abiotic features
N/a	Minor habitats are those that do not meet the above definitions.

VME

VMEs refer to sensitive underwater ecosystems that are at risk due to fishing activities, particularly in deeper waters. While VMEs are most commonly associated with bottom-contact fisheries (like deep-sea trawl), they are also relevant to purse-seine fisheries. These ecosystems often contain unique or fragile habitats, such as deep-sea corals or seamounts, which can be inadvertently impacted by purse-seine fishing operations.

The IATTC has taken steps to protect VMEs by enforcing measures to prevent purse-seine vessels from operating in areas where VMEs are identified or where there is a risk of damaging these ecosystems. For instance, the IATTC's Resolution C-11-08 addresses the need to avoid fishing on seamounts and similar vulnerable areas in the Eastern Pacific Ocean. Fishing vessels are urged to report interactions with VMEs and take precautionary measures to mitigate any potential environmental damage. These protections are part of broader efforts to ensure sustainable fishing practices in the region.

- Fish Aggregating Devices (FADs)

FADs are artificial objects used to attract fish, primarily tuna, and are commonly employed in purse-seine fisheries. FADs are often deployed in the open ocean and can lead to increased catch rates, but they also pose significant risks, particularly in terms of bycatch (and the potential for ecological disruption.

In response to these concerns, the IATTC has introduced specific management measures for FADs to minimize their negative impacts. These measures include:

- FAD registration: Vessels must register their FADs to track their location and usage.
- FAD limit on deployment: To control overfishing, limits are often placed on the number of FADs a vessel can deploy.
- FAD-related bycatch monitoring: The IATTC has been improving efforts to monitor and manage bycatch associated with FADs, encouraging the use of non-entangling FADs that reduce the risk of bycatch.

For instance, Resolution C-17-01 sets rules on FAD design, encouraging the development of "eco-friendly" FADs that minimize bycatch risks. Additionally, efforts to reduce the number of FAD sets (fishing sets made around FADs) are in place to further control the impacts on fish populations and marine ecosystems.

In sum, both VMEs and FADs are integral components of the IATTC's management framework for the tuna purse-seine fishery, with regulations aimed at minimizing ecological impacts and promoting sustainable fishing practices. These efforts involve continuous monitoring and adaptation of fishing techniques and device designs to mitigate environmental risks, ensuring the long-term health of marine ecosystems in the region.

IATTC's Resolution C-11-08 on VMEs and Resolution C-17-01 on FADs are valuable resources that outline specific protocols and goals related to VMEs protection.

7.6.3. Ecosystem

The fishery operates in a dynamic ecological zone shaped by several key ocean currents, including the North and South Equatorial Currents, North Equatorial Countercurrent, South Equatorial Current, Humboldt Current, and Cromwell Current. These currents strongly influence the distribution of target species, such as tuna, and associated species across the waters of Ecuador, Colombia, and Panama.

The El Niño-Southern Oscillation (ENSO) is the dominant factor driving variability in the Eastern Pacific Ocean (EPO), as highlighted in IATTC reports. ENSO cycles alternate between El Niño and La Niña events, causing significant changes to oceanographic conditions, including sea-surface temperatures, thermocline depth, and trade wind strength. These variations, in turn, affect biological processes such as productivity, feeding, and reproduction for many marine species, including commercially valuable tunas and billfishes.

- La Niña conditions: A shallower thermocline concentrates tuna closer to the surface, enhancing catch rates.
- El Niño conditions: A deeper thermocline and warmer waters reduce catch rates, often requiring fishers to increase effort and adjust fishing strategies to locate tuna.

ENSO events also influence recruitment rates of tropical tunas. For instance, the 2007–2008 La Niña was linked to lower tuna recruitment levels in the years that followed, underscoring the ecological and economic significance of these climatic cycles. (**Figure**).

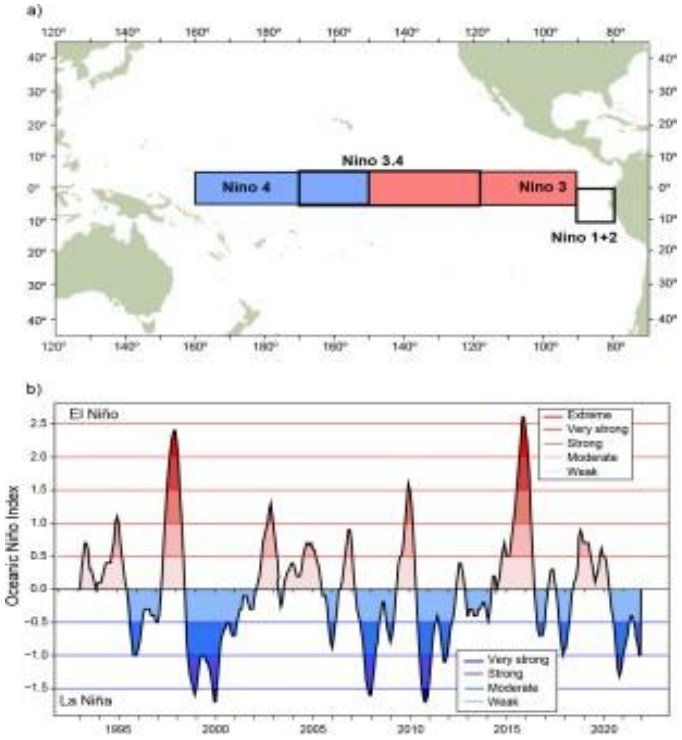


Figure 7.6.3.1. El Niño regions used as indicators of El Niño Southern Oscillation (ENSO) events in the Pacific Ocean (top panel), and the Oceanic Niño Index (ONI) used to monitor ENSO conditions in Niño region 3.4 from 5°N to 5°S and 120°W to 170°W (bottom panel). Time series shows the running 3-month mean ONI values from the start of the IATTC observer program through December 2021. (Source: http://origin.cpc.ncep.noaa.gov/products/analysis_monitoring/ensostuff/ONI_v5.ph)

The El Niño regions and the Oceanic Niño Index (ONI) are key tools for monitoring El Niño-Southern Oscillation (ENSO) events in the Pacific Ocean. The ONI, focused on sea-surface temperature (SST) anomalies in the Niño 3.4 region (5°N–5°S, 120°W–170°W), is the primary metric used by NOAA to identify and classify ENSO conditions.

ENSO is defined by SST anomalies exceeding ±0.5°C over a 5-month running mean, with events categorized from “weak” to “extreme.” Key historical events include:

- The “extreme” El Niño of 1997–1998, followed by a “very strong” La Niña (1998–2000).
- “Strong” La Niña events in 2007–2008, 2010–2011, and late 2020.
- The record-breaking El Niño of 2015–2016, with ONI values exceeding 2.5.

During 2020, ENSO-neutral conditions were observed for much of the year, transitioning to moderate-to-strong La Niña conditions by August.

These indices track inter-annual variability, providing critical insights into the magnitude and direction of ENSO impacts, which influence oceanographic conditions and ecosystems across the Pacific.

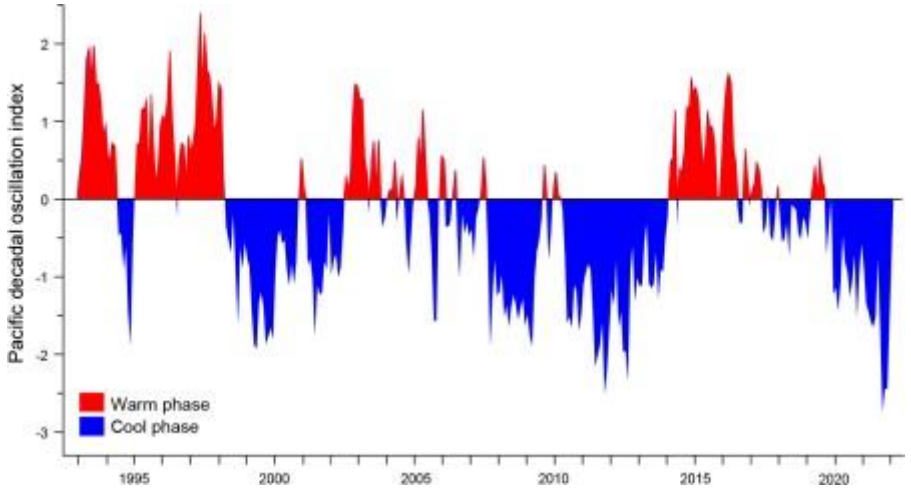


Figure 1.6.3.2. Monthly values of the Pacific Decadal Oscillation (PDO) Index, January 1993–December 2021. ERSST V5 PDO. (Source: Time Series data obtained from: https://psl.noaa.gov/pdo/ & SAC 13-10,2022).

The Pacific Decadal Oscillation (PDO) index measures long-term climate variability in the Pacific Ocean, with phases lasting between 20 and 30 years. While the PDO has its primary effects in the North Pacific, it also exhibits secondary patterns in the tropical Pacific that often run counter to ENSO trends. Its phases are categorized as either "warm" or "cool."

The PDO index has been utilized to investigate environmental factors that influence species vulnerability, such as its impact on silky shark susceptibility in EPO fisheries (Lennert-Cody et al., 2018). Notable PDO peaks, including those in August 1997 (2.79) and April 2016 (2.62), coincided with extreme El Niño events. Since early 2020, the PDO has entered a "cool" phase, with its intensity reaching a peak of -2.70 in October 2021, marking the strongest cool phase recorded since September 2012 (-2.31).

To support monitoring efforts, the IATTC has established an ecosystem model for the Eastern Tropical Pacific (ETP) designed to develop standardized ecological indicators. This model focuses on the pelagic food web and aims to ensure ecosystem integrity and functionality.

The theory of ecological traps has emerged as a concern in tuna purse seine fisheries worldwide, particularly due to the extensive use of drifting Fish Aggregating Devices (FADs). Ecological trap theory posits that organisms may be induced to settle in suboptimal habitats. Research into the use of FADs in tuna fisheries suggests that small tuna and other species, such as mahi-mahi, rainbow runner, and wahoo, may become biologically "trapped" due to their strong association with these devices. This hypothesis indicates that FADs might influence the biological characteristics of epipelagic species, altering their migration, growth, physical condition, predation rates, and natural mortality. Consequently, populations associated with FADs may be artificially displaced from one part of the ocean to another, resulting in movement patterns that would differ in their absence.

The strong affinity of fish for FADs could have unforeseen biological effects on tuna populations and their associated species. For instance, high levels of FAD usage are thought to potentially alter tuna migratory paths and affect traits such as growth and reproduction (e.g., Marsac et al., 2000). However, the assessment team notes that there is currently no specific research addressing the existence or impact of such ecological traps in the EPO. Further investigation is planned during the next audit as part of the ongoing certification process

7.6.4. P2 Scoring elements

Table 7.6.4.1. Principle 2 scoring elements assessed in section 7.6.2

Component	Scoring elements	Designation	Data-deficient
Primary	Yellowfin tuna	Main	No
Primary	Skipjack tuna	Main	No
Primary	Bigeye tuna	Minor	No
Secondary	Wahoo	Minor	No
Secondary	Mahi mahi	Minor	No
Secondary	Black marlin	Minor	No
Secondary	Frigate tuna	Minor	No
Secondary	Black skipjack	Minor	No
ETP	Silky shark	N/A	No
ETP	Smooth tail devil ray	N/A	No
ETP	Hawksbill sea turtle	N/A	No
ETP	Scalloped hammerhead	N/A	No
ETP	Smooth hammerhead	N/A	No
ETP	Olive ridley sea turtle	N/A	No
Habitat	Epipelagic zone		No
Ecosystem	Physical and trophic factors		No

7.6.5. Principle 2 Performance Indicator scores and rationales

PI 2.1.1 – Primary species outcome

PI 2.1.1		The UoA aims to maintain primary species above the point where recruitment would be impaired (PRI) and does not hinder recovery of primary species if they are below the PRI		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Main primary species stock status**			
	Guide post	Main primary species are **likely** to be above the PRI. OR If the species is below the PRI, the UoA has measures in place that are **expected** to ensure that the UoA does not hinder recovery and rebuilding.	Main primary species are **highly likely** to be above the PRI. OR If the species is below the PRI, there is either **evidence of recovery** or a demonstrably effective strategy in place **between all MSC UoAs which categorise this species as main**, to ensure that they collectively do not hinder recovery and rebuilding.	There is a **high degree of certainty** that main primary species are above the PRI **and are** fluctuating around a level consistent with MSY.
	Met?	**YFT - Yes** **SKJ - Yes**	**YFT – Yes** **SKJ – Yes**	**YFT – No** **SKJ – Yes**

Rationale		**Yellowfin tuna** According to the risk analysis by Aires-da-Silva et al. (2020), the expected and median values for the combined distributions of Fcurr/FMSYF were estimated at 0.67 and 0.65, respectively, with a 0.09 probability that this ratio exceeds 1. Similarly, the expected median values for Scurr/SMSYS were 1.57 and 1.58, respectively, with a probability of 0.12 that the ratio falls below 1. The Guidance to the Fisheries Standard under GSA2.2.2 provides examples of how fisheries can meet the requirements at SG80 and SG100 levels. For instance, in the case of yellowfin tuna (YFT) in the EPO, a fishery meets SG80 if "there is an instantaneous estimate of current stock status that is not less than 90% of BMSY. With a probability of BCURRENT<BMSYB <BMSY being 0.12, the fishery satisfies the SG 60 and SG80 requirements. The lack of a recent full stock assessment means that it is not possible to determine with a high degree of certainty that the stock is above the PRI with high certainty and SG 100 is not met. **Skipjack Tuna:** The 2021 interim skipjack tuna (SKJ) assessment was conducted using Stock Synthesis, similar to assessments for bigeye (BET) and yellowfin (YFT) tuna. This assessment aimed to estimate parameters while evaluating the uncertainty associated with various assumptions and data, as well as the robustness of stock status estimates (Maunder et al., 2022). Because SKJ is a short-lived species with highly variable abundance, early fishery data are less relevant for determining current status. Consequently, the assessment focused on data from 2006 to 2021, avoiding issues tied to earlier assessments of BET and YFT. These included the influence of El Niño on catchability and selectivity, variability in early 2000s longline data, and inconsistencies during the expansion of FAD fisheries. The reference model, based on baseline assumptions, estimated that the 2021 exploitation rate was slightly above the status quo (1.01). Sensitivity trials showed that half the models also estimated exploitation rates above the status quo, ranging from marginally higher (<0.1<0.1<0.1) to a more substantial increase (0.1), with one exception reporting a high value of 1.59. In contrast, the 2020 exploitation rate was estimated below the status quo in all but one case (0.05). There is strong confidence that the primary species remain above the point of recruitment impairment (PRI) and are fluctuating around levels consistent with maximum sustainable yield (MSY). As a result, SG60, SG80 are all met. The lack of a recent full stock assessment means that it is not possible to determine with a high degree of certainty that the stock is above the PRI with high certainty and SG 100 is not met.		
b	**Main primary species stock status**			
	Guide post			**Minor** primary species are **highly likely** to be above the PRI. or If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of **minor** primary species.
	Met?			BET- Yes

Rationale	**Bigeye tuna**: IATTC Resolution C-16-02 establishes target and limit reference points for biomass and fishing mortality. The interim spawning biomass limit (SLIMITS) is defined as 50% of virgin recruitment (SB=0.5R0SB = 0.5R_0SB=0.5R0) based on a Beverton-Holt stock-recruitment function with a steepness of 0.75, equivalent to 7.7% of virgin spawning biomass (Maunder & Deriso, 2014). The fishing mortality limit (FLIMITF) is the rate that under equilibrium conditions sustains the spawning biomass at SLIMITS . EPO bigeye tuna status is informed by the 2020 benchmark stock assessment (Xu et al., 2020) and stock status indicators (SSIs). Stock status relative to reference points was calculated as a weighted average across 44 alternative models using varying steepness values (0.7–1.0). The combined distribution of Fcur/FLIMIT from the 44 models tested is bimodal, due to the substantial differences in the estimates between the “short-term models” which are more pessimistic (Fcur/FMSY mostly above 1), and the “medium-term” models that do not assume the recruitment shift (R) is real, which are more optimistic (Fcur/FMSY mostly below 1). For the combined distribution, Fcur is at about 60% of FLIMIT and the probability of (Fcur > FLIMIT is 5%. The probability distribution for Scur/SLIMIT is also bimodal. The combined ratio of Scur/SLIMIT is estimated at approximately 3.07 and the probability of Scur < SLIMIT = 6%. (Xu et al., 2020). Therefore, minor primary species are highly likely to be above the PR and SG 100
Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**
Data-deficient? (Risk-Based Framework needed)	**No**

PI 2.1.2 – Primary species management strategy

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Management strategy in place**			
	Guide post	There are **measures** in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to be above the PRI.	There is a **partial strategy** in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the PRI.	There is a **strategy** in place for the UoA for managing main and minor primary species.
	Met?	**Yes all UoAs**	**Yes all UoAs**	**No all UoAs**
Rationale		The assessment of the UoA against this performance indicator demonstrates that comprehensive measures are in place to manage impacts on main and minor primary species. The combination of resolutions, such as C-21-04, C-16-02, C-03-04, and others, reflects a cohesive strategy designed to achieve sustainability objectives for tropical tunas in the Eastern Pacific Ocean (EPO). These resolutions collectively form the basis for a strategy that meets SG60 and SG80, as they include measures targeting biomass conservation, effort limitations, monitoring, and adaptive management mechanisms. Key measures include mandatory fishing closures, such as the 72-day purse seine fishing bans (Resolution C-21-04), area closures to protect juvenile tuna (corralito area), retention mandates for all skipjack, bigeye, and yellowfin tuna, and the establishment of harvest control rules (HCRs) that prevent stocks from falling below limit reference points (Resolution C-16-02). These measures ensure that impacts are managed at a level consistent with maintaining stocks at or above sustainable levels. Additionally, resolutions addressing fleet capacity (C-02-03), at-sea reporting (C-03-04), and vessel monitoring (C-14-02) further support the implementation of these strategies by enhancing accountability and compliance. However, uncertainties remain regarding the management of bigeye tuna (BET) stocks. While the measures in place effectively address main and minor species under the scope of SG80, recent IATTC management actions do not fully address uncertainties in BET stock status, preventing the strategy from meeting SG100. This shortfall underscores the need for more proactive and targeted management responses to address gaps in the current strategy.		
b	**Management strategy evaluation**			
	Guide post	The measures are considered **likely** to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).	There is some **objective basis for confidence** that the measures/partial strategy will work, based on some information directly about the fishery and/or species involved.	**Testing** supports **high confidence** that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved.
	Met?	**Yes all UoAs**	**Yes all UoAs**	**No all UoAs**
Rationale		The strategy for yellowfin, skipjack and bigeye tuna in the IATTC is implemented by restricting the fishing effort of the entire purse seine fishery with closure periods and fishing capacity limits. **SG60 and SG80 are met**. The current closure period for IATTC purse seine vessels is 72 days. With a focus on bigeye tuna and yellowfin tuna (as more vulnerable species than skipjack tuna) Aires-da-Silva et al. (2020)		

<table>
<tr><td colspan="2">PI 2.1.2</td><td colspan="3">There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch</td></tr>
<tr><td colspan="2"></td><td colspan="3">investigated the utility of various closure periods (0, 36, 70, 72, 88, and 100 days) for the IATTC purse seine fishery.

For the years 2023 and 2024, CPCs shall ensure that vessels that exceeded, during the previous year, the annual catch limit of 1,200 metric tons of bigeye tuna shall increase, during the following year by 10 additional days, the closure period established in paragraph 3 of the resolution C22-05. If during this same period a vessel exceeds the annual catch limit of 1,500 metric tons of bigeye tuna, they shall increase the closure by 13 days; if it exceeds the annual catch limit of 1,800 tons of bigeye tuna, it shall increase its closure by 16 days; if it exceeds the annual catch limit of 2,100 metric tons, it shall increase its closure by 19 days; and if it exceeds the annual catch limit of 2,400 metric tons, itshall increase its closure by 22 days, in addition to the closure stipulated in paragraph 3 of the resolution above (C22-05).

Therefore, testing supports high confidence that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved and SG100 is not met.</td></tr>
<tr><td rowspan="3">c</td><td colspan="4">Management strategy implementation</td></tr>
<tr><td>Guide post</td><td></td><td>There is some evidence that the measures/partial strategy is being implemented successfully.</td><td>There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its overall objective as set out in scoring issue (a).</td></tr>
<tr><td>Met?</td><td></td><td>Yes</td><td>Yes / No</td></tr>
<tr><td colspan="2">Rationale</td><td colspan="3">As per the conservation measures for tropical tunas in the EPO outlined in Resolution C-21-04, effective January 1, 2022, each CPC is required to strengthen the monitoring and control of tuna catches. This includes utilizing data from onboard observers, logbooks, port sampling, and information from tuna processing facilities. These measures enhance the ability to monitor catches by operators and captains, supporting compliance with the Resolution's objectives and achieving SG80.

Furthermore, 100% observer coverage for IATTC purse seine vessels operating under the AIDCP provides strong assurance in verifying set types and catch data for the Atún Sostenible UoAs. This is reinforced by an Enhanced Monitoring Program (EMP) aimed at further improving data accuracy. Following a pilot program in 2022, coordinated by IATTC scientific staff and aligned with the proposal in IATTC-98-INF B, the EMP officially began no later than January 1, 2023.

Preliminary results from the EMP pilot study, conducted at the ports of Manta and Posorja, Ecuador, between September 2022 and February 2023, showed promising potential for monitoring bigeye tuna catches.
Key outcomes included:
• Implementation tests at key ports.
• Early indications that the EMP is an effective tool for monitoring bigeye tuna.
• Identification of logistical considerations for data collection.

The program’s work plan, established in 2023, continues to refine data collection processes, contributing to the sustainable management of fisheries in the Eastern Pacific Ocean and improving understanding of the bigeye tuna fishery.

Although this fishery does not deploy FADs, additional measures addressing FAD-related impacts have been implemented. The evidence demonstrates successful implementation of a partial strategy, meeting the objectives of scoring issue (a) and confirming compliance with SG100.</td></tr>
</table>

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
d	**Shark finning**			
	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	**NA**	**NA**	**NA**
Rationale		No primary species are sharks, and so this SI is not scored (SA3.5.2, MSC 2018).		
e	**Review of alternative measures**			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all primary species, and they are implemented, as appropriate.
	Met?	**Yes**	**Yes**	**No**
Rationale		A full retention policy is in place for tuna in the convection are. Tuna is the target species, and vessels retain and land all tuna caught unless the captain determines that it was taken during the final series of the trip with insufficient storage space available or if the fish is deemed unfit for human consumption. Tuna is classified as unfit for consumption if it has been entangled or crushed in the seine net, damaged by predators like sharks or whales, or spoiled in the net due to gear failure that prevented normal retrieval and catch handling, including efforts to release live fish. This policy are part of IATTC Resolution C-01-04 on Bycatch and follows ISSF recommendations applied by the fishery. These measures are implemented as appropriate, ensuring that SG60 and SG80 are met. To meet SG more information from the client logbook will be required and SG 100 is not met for the preassessment.		
Draft scoring range		**≥80**		
Information gap indicator		**Information sufficient to score PI**		

PI 2.1.3 – Primary species information

PI 2.1.3		Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Information adequacy for assessment of impact on main primary species**			
	Guide post	Qualitative information is **adequate to estimate** the impact of the UoA on the main primary species with respect to status. OR **If RBF is used to score PI 2.1.1 for the UoA:** Qualitative information is adequate to estimate productivity and susceptibility attributes for main primary species.	Some quantitative information is available and is **adequate to assess** the impact of the UoA on the main primary species with respect to status. OR **If RBF is used to score PI 2.1.1 for the UoA:** Some quantitative information is adequate to assess productivity and susceptibility attributes for main primary species.	Quantitative information is available and is **adequate to assess with a high degree of certainty** the impact of the UoA on main primary species with respect to status.
	Met?	**Yes all UoAs**	**Yes all UoAs**	**No all UoAs**
Rationale		The stock assessment of primary species relies on robust data sources, including observer data, logbooks, cannery data, and port sampling. These provide sufficient information to meet SG60. The observer program, initiated in 1992, collects detailed data on fishing activities, gear characteristics, and catch composition for both target and non-target species. Size data for tropical tuna are categorized by weight class but lack individual fish measurements. Observer data have the highest spatial (100th of a degree) and temporal (minutes to hours) resolution among the sources. Unlike logbooks, observers record catch, load, and discard weights, although discards have been prohibited in recent years. Logbook data include set-by-set records of fishing locations, dates, set types, and catch amounts, but lack size and operational details. These data are less comprehensive than observer data and are used primarily when observer data are unavailable. Cannery data, provided at the trip level, offer quantitative catch information but lack precise spatial, temporal, and operational details. While not comprehensive, they contribute to the overall data set. Port sampling data, collected during vessel unloading, focus on samples from selected wells rather than entire trips. These data complement the other sources by providing additional quantitative insights. Combined, these data sources are sufficient to evaluate the impact of the UoA on primary species. With adherence to IATTC measures, including a full retention policy for tuna species, SG 80 is met, however, to score SG 100 more information from all the vessels should be provided.		
b	**Information adequacy for assessment of impact on minor primary species**			
	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor primary

PI 2.1.3		Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
				species with respect to status.
	Met?			**Yes**
Rationale		Bigeye reporting data are the same as described above for the main primary species. The information used to assess the stock status of bigeye it comes from the same sources of information. Therefore, some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status and **SG100 is met**		
c	**Information adequacy for management strategy**			
	Guide post	Information is adequate to support **measures** to manage **main** primary species.	Information is adequate to support a **partial strategy** to manage **main** primary species.	Information is adequate to support a **strategy** to manage **all** primary species and evaluate with a **high degree of certainty** whether the strategy is achieving its objective.
	Met?	**Yes**	**Yes**	**No**
Rationale		Information is widely available for the three main tuna species that have been identified as primary species in the UoAs. The fleet has 100% observer coverage of the sets. IATTC has an observer programme covering 50% of these observations under its initiative and the fleet the other 50%, obtaining data in accordance with each other. In addition, the fleet can be tracked by VMS. Therefore, information is adequate to support a **partial strategy** to manage main primary species and **SG60 and SG80 are met**. However, due to the lack of data from some of the vessels in this pre- assessment SG 100 is not met.		
Draft scoring range		**≥80**		
Information gap indicator		**Information sufficient to score PI**		

PI 2.2.1 – Secondary species outcome

PI 2.2.1		The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Direct effects**			
	Guide post	Main secondary species are **likely** to be above biologically based limits. OR If below biologically based limits, there are **measures** in place expected to ensure that the UoA does not	Main secondary species are **highly likely** to be above biologically based limits. OR If below biologically based limits, there is either **evidence of recovery or a**	There is a **high degree of certainty** that main secondary species are above biologically based limits.

PI 2.2.1		The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit		
		hinder recovery and rebuilding.	**demonstrably effective partial strategy** in place such that the UoA does not hinder recovery and rebuilding. AND Where catches of a main secondary species outside of biological limits are **considerable**, there is either **evidence of recovery** or a, **demonstrably effective strategy in place between those MSC UoAs that have considerable catches of the species**, to ensure that they collectively do not hinder recovery and rebuilding.	
	Met?	**Not applicable**	**Not applicable**	**Not applicable**
Rationale		There are no main secondary species in the UoAs as detailed in Section 7.5.1., therefore scoring issue a is not applicable as per the MSC's interpretation.		
b	**Minor secondary species stock status**			
	Guide post			Minor secondary species are highly likely to be above biologically based limits. OR If below biologically based limits', there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species
	Met?			**No**
Rationale		**Common Dolphinfish (Mahi-Mahi) (*Coryphaena hippurus*)** The biomass and fishing mortality status in the eastern Pacific Ocean are uncertain due to the absence of reference points. Biomass shows seasonal fluctuations, peaking in fall and winter and declining in May and June. Biomass has remained stable from 2007 to 2014, with inter-annual recruitment variability. Fishing mortality during this period ranged from 0.53 to 0.85 (Aires-da-Silva et al., 2016). **FigrateTuna (*Auxis spp*.)** Bullet tuna are often recorded as bycatch in large purse-seine fisheries, with species-level identification uncommon. Preliminary observer data indicate a decline in catches from 1,922 tons in 2005 to 481 tons in 2020 (IATTC, 2021).		

PI 2.2.1	**The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit**
	Wahoo (*Acanthocybium solandri*): The lack of targeted assessments means that the current status of the wahoo stock in the EPO remains uncertain. This underscores the need for dedicated research and monitoring to better understand the population dynamics and ensure sustainable management of wahoo in the region. The catches of the UoAs are negligible and the team considers there is no impact on this stock. **Black marlin *(Macaira indica):*** The catches of the UoAs are negligible and the team considers there is no impact on this stock.No targeted fishery exists, but it is commonly caught as bycatch in purse seine fleets across the Eastern Pacific Ocean. The stock is widely distributed and considered common in the region, but no specific management measures or stock assessments are in place. Landings have shown an upward trend, peaking at over 6,700 tons in 2016, with significant contributions from Mexico, Ecuador, and the USA. Recent catches were 5,300 tons in 2019 and 4,300 tons in 2020 (IATTC, 2021). **Wahoo (*Acanthocybium solandri*):** In the Eastern Pacific Ocean (EPO), wahoo is primarily caught incidentally by purse-seine vessels targeting tunas. The Inter-American Tropical Tuna Commission (IATTC) does not conduct stock assessments or establish specific reference points or management measures for wahoo. As a result, the stock status in the EPO is uncertain. However, the negligible catches by the UoAs suggest there is no significant impact on this stock. **Black marlin (*Makaira indica*):** In the EPO, black marlin is mainly caught as a bycatch in tuna longline and purse-seine fisheries, along with artisanal and recreational fisheries. The IATTC does not carry out stock assessments or define reference points or specific management measures for this species. Therefore, its stock status in the region remains uncertain. Nonetheless, the minimal catches by the UoAs indicate there is no significant impact on this stock. Since the team does not have information from all vessels in the pre-assessment, a precautionary approach has been adopted. As a result, SG100 for minor secondary species is not met. The catches from the UoAs could potentially be higher than estimated, which would require further investigation to assess their impact more accurately.
Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**
Data-deficient? (Risk-Based Framework needed)	**No**

PI 2.2.2 – Secondary species management strategy

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Management strategy in place**			
	Guide post	There are **measures** in place, if necessary, which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a **partial strategy** in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a **strategy** in place for the UoA for managing main and minor secondary species.
	Met?	**Yes**	**Yes**	**No**
Rationale		As mentioned for primary species there are several resolutions on IATTC that look for the conservation of the target and non-target species in the tuna fisheries and for the lower impacts in the whole ecosystems. Along with other resolutions focus on elements such as dolphins or marine mammals, the consolidated resolution on bycatch C-04-05 (Rev 2) is considered to represent a strategy that is in place to manage the impact of the fishery on bycatch and to maintain the current very low level of impact. The resolution contains different measures that can be apply to the management of secondary species as per MSC requirements. In the general section is stated: – Require fishermen on purse-seine vessels to promptly release unharmed, to the extent practicable, all sharks, billfishes, rays, dorado, and other non-target species and; – Encourage fishermen to develop and use techniques and equipment to facilitate the rapid and safe release of any such animals. Further the resolution C-21-04 (Conservation measures for tropical tunas in the Eastern Pacific Ocean during 2022-2024) requirements include the following: – Requires that purse seine vessels must stop fishing in the Convention area for a period of 72 days, from either 29th July to 8th October inclusive, or from 9th November to 19th January the following year inclusive. Other relevant measures include those specified under Resolution C-14-02 (on the establishment of a vessel monitoring system) and Resolution C-03-05 (on data provision). There are then additional measures, under Resolution C-21-04, that focus on the FAD elements of the purse seine tuna fishery, specifically. With all together and following the interpretation Use of 'if necessary' in P2 management PIs (FCR v2.0 - Annex SA PI 2.1.2, 2.2.2, 2.4.2, 2.5.2) (site.com) **SG 60 and SG 80** are met by default following this interpretation which also applies to management. To fully meet SG100 there need to be a strategy that address all secondary species, main and minor, and it is not clear that strategies are well defined for i.e EPO Bigeye tuna, bullet tuna or black skipjack tunas, therefore **SG100 is not met.**		
b	**Management strategy evaluation**			
	Guide post	The measures are considered **likely** to work,	There is some **objective basis for confidence** that	**Testing** supports **high confidence** that the partial

PI 2.2.2		**There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.**		
		based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species).	the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.	strategy/strategy will work, based on information directly about the UoA and/or species involved.
	Met?	**Yes all UoAs**	**Yes all UoAs**	**No all UoAs**
Rationale		Catches of secondary species are minimal and there are no major species in the catch, it could be said that the strategies designed to minimise this impact are well defined and implemented. There is ample information to corroborate the low catches of these species with wide coverage (100 % observer coverage). However, due to the lack of information from two of the vessels, there is no credible testing evidence from the fleet that these measures are successful with a high degree of confidence. With that in mind**, SG60 and SG80 are met** but there is **not high enough confidence to meet SG100**		
c	**Management strategy implementation**			
	Guide post		There is **some evidence** that the measures/partial strategy is being **implemented successfully**.	There is **clear evidence** that the partial strategy/strategy is being **implemented successfully and is achieving its objective as set out in scoring issue (a).**
	Met?		**Yes**	**No**
Rationale		Assuming that the catches of secondary species are minimal and there are no major species in the catch, it can be concluded that the strategies designed to minimize this impact are well-defined and effectively implemented. The fleet maintains 100% observer coverage, and evidence indicates that the number of non-target species is minimal, with closure protocols being followed to protect the ecosystem. These results demonstrate successful implementation of the strategies, and SG80 is met. However, due to the uncertainty surrounding minor secondary species and the limited knowledge of their stock status beyond the data from observer programs for one of the vessels, it is not possible to definitively confirm that the partial strategy or strategy is being successfully implemented and achieving its objectives as outlined in scoring issue (a). Therefore, SG100 is not met.		
d	**Shark finning**			
	Guide post	It is **likely** that shark finning is not taking place.	It is **highly likely** that shark finning is not taking place.	There is a **high degree of certainty** that shark finning is not taking place.
	Met?	**NA**	**NA**	**NA**
Rationale		No shark species have been identified as secondary species, all the species reported corresponds to the ETP definition.		
e	**Review of alternative measures to minimise mortality of unwanted catch**			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-	There is a **regular** review of the potential effectiveness and practicality of alternative	There is a **biennial** review of the potential effectiveness and practicality of alternative

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch.		
		related mortality of **unwanted** catch of main secondary species.	measures to minimise UoA-related mortality of **unwanted** catch of main secondary species and they are implemented as appropriate.	measures to minimise UoA-related mortality of **unwanted** catch of all secondary species, and they are implemented, as appropriate.
	Met?	**Yes**	**Yes**	**No**
Rationale		There are no main secondary species however more information will be needed from all the vessels under assessment, therefore, it will be assumed that SG 80 is met but further detail will be sought if the fishery goes to full assessment.		
Draft scoring range		**≥80**		
Information gap indicator		**Information sufficient to score PI**		

PI 2.2.3 – Secondary species information

PI 2.2.3		Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Information adequacy for assessment of impacts on main secondary species**			
	Guide post	Qualitative information is **adequate to estimate** the impact of the UoA on the main secondary species with respect to status. OR **If RBF is used to score PI 2.2.1 for the UoA:** Qualitative information is adequate to estimate productivity and susceptibility attributes for main secondary species.	Some quantitative information is available and **adequate to assess** the impact of the UoA on main secondary species with respect to status. OR **If RBF is used to score PI 2.2.1 for the UoA:** Some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species.	Quantitative information is available and **adequate to assess with a high degree of certainty** the impact of the UoA on main secondary species with respect to status.
	Met?	**Yes / No**	**Yes / No**	**Yes / No**
Rationale		There are no main secondary species in this fishery therefore this scoring issue is not relevant and it won't be scored		
b	**Information adequacy for assessment of impacts on minor secondary species**			
	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.
	Met?			**No**
Rationale		For both the main and minor species, there is an ample amount of quantitative information available, including observer data, logbook data, cannery data, and port-sampling data. However, not all the information was provided to the team, with a precautionary approach SG 100 is not met.		
c	**Information adequacy for management strategy**			
	Guide post	Information is adequate to support **measures** to manage **main** secondary species.	Information is adequate to support a **partial strategy** to manage **main** secondary species.	Information is adequate to support a **strategy** to manage **all** secondary species, and **evaluate** with a **high degree of certainty** whether the strategy is **achieving its objective**.
	Met?	**Yes**	**Yes**	**No**
Rationale		There is reliable information due to the high level of observer coverage on vessels in the UoAs. The requirement for 100% observer coverage on larger purse seine vessels is met, therefore SG60 and SG80 are met.		

PI 2.2.3	**Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species**
	However, as mentioned in section 2.2.1, there are gaps in information regarding bullet tuna and black skipjack, as the stock status for these species is not well understood, and all available data comes from CPUE and catch rates. Given this, the assessment team cannot conclude that the information is sufficient to support a strategy for managing all secondary species or to evaluate with high certainty whether the strategy is achieving its objectives. Further, more information from all the vessel should be provided. Therefore, SG100 is not met
Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

PI 2.3.1 – ETP species outcome

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Effects of the UoA on population/stock within national or international limits, where applicable**			
	Guide post	Where national and/or international requirements set limits for ETP species, the **effects of the UoA** on the population/ stock are known and **likely** to be within these limits.	Where national and/or international requirements set limits for ETP species, the **combined effects of the MSC UoAs** on the population /stock are known and **highly likely** to be within these limits.	Where national and/or international requirements set limits for ETP species, there is a **high degree of certainty that the combined effects of the MSC UoAs** are within these limits.
	Met?	**NA**	**NA**	**NA**
Rationale		Limits have not been established for ETP (Endangered, Threatened, and Protected) species caught by UoA vessels. While the IATTC has international requirements for setting limits on dolphin species within the RFMO, the observer data provided by the client indicates that the vessel SDona Roge has had no interactions with dolphins in the past five years. Therefore, no dolphins have been caught by the UoAs. For marine mammals there is a limit set up by AIDCP. The overall dolphin mortality limit (DML) for the international fleet in 2023 was 5,000 animals, and the unreserved portion of 4,900 was divided among 113 qualified vessels that requested DMLs. The average individual-vessel DML (ADML), based on 113 DML requests, was 43. In 2024, the Parties requested 119 DMLs for 2024 from the unreserved portion (4,900) of the overall fleet mortality limit. In 2023, dolphin mortality estimates in the tuna fishery were 828 animals, a decrease from 965 mortalities recorded in 2022. Mortality data for the years 1979-2023, by species and stock, show a long-term decline in dolphin deaths since the early 1990s, despite a spike in 2022. The data for 1993-2023 is based on observations from the AIDCP On-Board Observer Program, which collects mortality data, with adjustments made for unobserved trips due to the pandemic in recent years. In 2023, Class-6 vessels made 10,328 sets on dolphin-associated schools, a slight decrease from 10,614 sets in 2022. The number of sets on dolphin-associated schools accounted for 39.1% of total sets, compared to 38.6% in 2022. The average dolphin mortality per set was 0.08 in 2023, down from 0.09 in 2022. The total catch of dolphin-associated yellowfin tuna increased by 13.2% in 2023, with 69.5% of the total yellowfin catch coming from dolphin-associated sets. This was an increase from 65% in 2022. Efforts to reduce dolphin mortality have been successful, as indicated by the increase in sets with no dolphin mortality, which rose to 96.2% in 2023 from 38% in 1986. Additionally, the average number of dolphins left in nets after backdown decreased from 6.0 in 1986 to 0.1 or less since 2001, with a rate of 0.0 in recent years (Figure). However, should the fishery undergo a full assessment, more information will need to be provided for all vessels, and further investigations regarding dolphin interactions or fatalities will be required. For this pre-assessment, the team has considered only the species reported, and none of them has established limits. Based on this information, Si)-a is considered not aplicable.		

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		
b	**Direct effects**			
	Guide post	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?	**Yes**	**No**	**No**
Rationale		For all scoring elements related to sea turtles, sharks, and rays, the rationales provided are based on information derived from a single vessel and other MSC-certified fisheries in the area, such as TUNACONS and ATUN Sostenible. However, the UoA (Unit of Assessment) could not fully demonstrate that the recovery of all these ETP (Endangered, Threatened, and Protected) species is not hindered. The assessment team has concluded with a scoring of **SG 60**. This score reflects the understanding that more information is needed to be confident that other vessels operating in the region exhibit the same conservation practices and that no significant harm is being caused to these species or their recovery efforts. **Sea Turtles:** A fifth species, the loggerhead turtle, feeds in the northern and southern limits of the eastern tropical Pacific but nests on distant beaches in the western Pacific. While the knowledge on conservation, movements, and habitat use for each of these species was updated in 2017 (IAC Habitat Use Working Group, 2017), the status of turtles encountered by fisheries in the EPO has not been specifically examined by IATTC. Current estimates suggest approximately 116,000 nesting female green turtles, 11,725 nesting female hawksbill turtles, 9,200 nesting female loggerhead turtles, and 4,000 nesting female leatherback turtles in the Pacific Ocean (Seminoff et al., 2015; NMFS and FWS, 2013; Benson et al., 2015). All these sea turtle species are listed as vulnerable, endangered, or critically endangered by the International Union for Conservation of Nature (IUCN). Based on the observer data, the potential effects of the fishery are known for all species. The mortalities observed are unlikely to hinder the recovery of olive ridley turtles and Hawksbill turtle given their low interaction. Therefore, SG60 is met. However, the risk of sea turtle entanglement in FADs is not fully quantified. The assessment team could not conclude with high confidence that there are no significant detrimental direct effects of the UoA on sea turtle species neither SG 80 nor SG100 are not met. **Silky Shark:** There has been no stock assessment for silky sharks in the EPO. Stock status indicators based on bycatch-per-set data in the EPO have been developed but the confidence in this assessment is limited due to poor estimation of the size category of released sharks (Lennert-Cody et al., 2019). A Pacific-wide stock assessment estimated total catch at 38,000 t annually, with the UoA FAD fishery catching an estimated 21,000 individuals (350 tons), or 0.009% of the total. The interactions with the vessel Dona Roge showed very few cases. However, there is a risk of unobserved mortality from entanglement in FADs. The absence of scientific evidence to support the low risk of entanglements and the lack of a formal stock assessment for silky sharks means SG 80 is not met. **Hammerhead sharks:** Hammerhead sharks are critically endangered in the Pacific Ocean, with two distinct populations. Observer data from 2019 to 2023 indicates low number of cases. Given the low level of interaction		

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 this species, the measures in place to minimize risk, and the UoA's adherence to safe handling and release protocols, SG60. However, as there is insufficient information on population status or data form all the vessels in the UoAs to meet SG 80. **Mobulid Rays:** Mobulid rays, including giant manta rays and devil rays, face declining population trends due to fishing pressures. Between 2019 and 2023, one species of mobulid rays was caught by the fishery, with total catches of mobulids from one vessel very low. These rays are all returned to the water, but post-release survival rates are not publicly available. Given the small number of interactions and the measures to minimize risks (such as low-entanglement FADs and safe handling protocols), SG60 is met. However, due to the lack of data from the UoAs SG 80 is not met.		
c	**Indirect effects**			
	Guide post		Indirect effects have been considered for the UoA and are thought to be **highly likely** to not create unacceptable impacts.	There is a **high degree of confidence** that there are no **significant detrimental indirect effects** of the UoA on ETP species.
	Met?		**Yes**	**No**
Rationale		The impact of fishing on the eastern tropical Pacific Ocean (ETP) ecosystem and species at various trophic levels has been extensively studied through modelling efforts (as outlined in the CLIOTOP WG3: Climate Impacts on Oceanic Top Predators, Working Group 3: Trophic Pathways in Open-Ocean Ecosystems). These studies indicate that while industrial fishing has affected the relative biomass of species across different trophic levels, through both direct mechanisms (such as catching) and indirect mechanisms (where catches at one trophic level impact species at others through changes in predator-prey relationships), the overall effects have been moderate and are considered reversible (Griffiths & Fuller 2019a). Indirect effects have been factored into these assessments, and it is believed that they are unlikely to create unacceptable impacts. As a result, SG80 is met for all scoring elements. Although the team notes that potential impacts arising from mother-calf separation could lead to indirect effects due to fishing activities on dolphins, no fatalities or interactions have been reported by the client. More information related to dolphins' interactions will be requested if the fishery goes to full assessment		
Draft scoring range			**60-79**	
Information gap indicator			**More information sought** Given these uncertainties and the lack of full evidence across all vessels, SG 60 is awarded. Further data, including stock assessments, improved bycatch monitoring, and more comprehensive information about the fleet's adherence to conservation measures, is required to justify a higher score, such as SG 80 or SG 100.	
Data-deficient? (Risk-Based Framework needed)			**No**	

PI 2.3.2 – ETP species management strategy

PI 2.3.2		The UoA has in place precautionary management strategies designed to: • **Meet national and international requirements.** • **Ensure the UoA does not hinder recovery of ETP species.** **Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species**		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Management strategy in place (national and international requirements)**			
	Guide post	There are **measures** in place that minimise the UoA-related mortality of ETP species, and are expected to be **highly likely to achieve** national and international requirements for the protection of ETP species.	There is a **strategy** in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be **highly likely to achieve** national and international requirements for the protection of ETP species.	There is a **comprehensive strategy** in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to **achieve above** national and international requirements for the protection of ETP species.
	Met?	**Yes**	**Yes**	**No**
Rationale		IATTC has developed several measures to protect ETPs species, the most relevant that apply to this fishery are listed below. Resolution C-15-04, adopted by the Inter-American Tropical Tuna Commission (IATTC) in 2015, focuses on the conservation of mobulid rays (family Mobulidae) within the IATTC Convention Area. This resolution prohibits the retention, transshipment, landing, storage, sale, or offering for sale of any part or whole carcass of mobulid rays caught in association with fisheries in the area. It also mandates the prompt and safe release of any mobulid rays incidentally caught, ensuring minimal harm during the release process. As of November 2024, Resolution C-15-04 remains active and continues to be enforced. There have been no amendments or updates to this specific measure since its adoption. The IATTC maintains a list of active resolutions, including C-15-04, on its official website. In summary, Resolution C-15-04 continues to play a crucial role in the conservation efforts for mobulid rays within the IATTC Convention Area, with no recent updates or changes to its provisions. . As of November 2024, the Inter-American Tropical Tuna Commission (IATTC) has implemented several resolutions aimed at the conservation of silky sharks (Carcharhinus falciformis) and other shark species within its convention area. The key resolutions and their current statuses are as follows: Resolution C-05-03 (2005): This resolution established initial conservation measures for sharks, including data collection and reporting requirements. It remains in effect and serves as a foundational framework for subsequent shark conservation efforts. Resolution C-16-06 (2016): This resolution introduced specific measures for the conservation of silky sharks, such as prohibiting the retention of silky sharks by purse-seine vessels and mandating the release of live specimens. It was active until superseded by Resolution C-19-05. Resolution C-19-05 (2019): Building upon previous measures, this resolution extended and enhanced conservation actions for silky sharks, emphasizing data collection and the prohibition of retention by longline vessels. It was in effect until replaced by Resolution C-21-06. Resolution C-21-06 (2021): Adopted during the 98th Meeting of the IATTC, this resolution amended and extended the provisions of C-19-05 for the years 2022 and 2023. It continued the prohibition on the retention of silky sharks and reinforced data collection efforts.		

<table>
<tr><td colspan="2">PI 2.3.2</td><td colspan="4">The UoA has in place precautionary management strategies designed to:
• Meet national and international requirements.
• Ensure the UoA does not hinder recovery of ETP species.

Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species</td></tr>
<tr><td colspan="2"></td><td colspan="4">Current Status (as of November 2024): Resolution C-21-06 was effective through 2023. As of now, there have been no new resolutions adopted to replace or extend C-21-06. Therefore, the specific measures outlined in C-21-06 are no longer in effect. However, the general provisions of Resolution C-05-03 continue to apply, maintaining a baseline framework for shark conservation within the IATTC convention area.

In summary, while specific measures for silky shark conservation under Resolution C-21-06 have lapsed, the overarching conservation framework established by Resolution C-05-03 remains active. Stakeholders are encouraged to stay informed about future IATTC meetings and potential new resolutions addressing shark conservation. Resolution C-19-04, adopted by the Inter-American Tropical Tuna Commission (IATTC) in 2019, focuses on mitigating the impacts of tuna fishing on sea turtles within the Eastern Pacific Ocean (EPO). This resolution superseded the earlier Resolution C-07-03 and specific provisions of Resolution C-04-05 (Rev. 2).

Provisions of Resolution C-19-04:
• Prohibition of Retention: Fishing vessels are prohibited from retaining, transshipping, landing, storing, selling, or offering for sale any part or whole carcass of sea turtles caught incidentally.
• Safe Handling and Release: Vessels must promptly release incidentally caught sea turtles, ensuring minimal harm during the release process.
• Use of Circle Hooks and Fish Bait: Longline vessels are encouraged to use circle hooks and whole fish bait to reduce sea turtle bycatch.
• Crew Training: Operators are required to train their crews in techniques for safe handling and releasing sea turtles.
• Reporting Requirements: Members and cooperating non-members (CPCs) must report all interactions with sea turtles, including species identification, condition upon release, and mitigation measures employed.
As of November 2024, Resolution C-19-04 remains in effect and continues to be enforced. There have been no amendments or updates to this specific measure since its adoption. The IATTC maintains a list of active resolutions, including C-19-04, on its official website.

In summary, Resolution C-19-04 continues to play a crucial role in the conservation efforts for sea turtles within the IATTC Convention Area, with no recent updates or changes to its provisions.
For all ETP species assessed (oceanic whitetip sharks, mobulid rays, sea turtles, seabirds, and dolphins), SG60 and SG80 are met due to existing management measures and regulations. However, SG100 is not met for any species, as the current strategies are in line with or slightly exceed the minimum required protections but do not go beyond those for enhanced conservation or management.</td></tr>
<tr><td rowspan="3">b</td><td colspan="5">Management strategy in place (alternative)</td></tr>
<tr><td>Guide post</td><td>There are measures in place that are expected to ensure the UoA does not hinder the recovery of ETP species.</td><td>There is a strategy in place that is expected to ensure the UoA does not hinder the recovery of ETP species.</td><td colspan="2">There is a comprehensive strategy in place for managing ETP species, to ensure the UoA does not hinder the recovery of ETP species.</td></tr>
<tr><td>Met?</td><td>Yes</td><td>Yes</td><td colspan="2">No</td></tr>
<tr><td colspan="2">Rationale</td><td colspan="4">Scoring issue need not be scored if requirements for protection or rebuilding are provided through national ETP legislation or international agreements.</td></tr>
<tr><td>c</td><td colspan="5">Management strategy evaluation</td></tr>
</table>

PI 2.3.2		**The UoA has in place precautionary management strategies designed to:** • **Meet national and international requirements.** • **Ensure the UoA does not hinder recovery of ETP species.** **Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species**		
	Guide post	The measures are **considered likely** to work, based on **plausible argument** (e.g. general experience, theory or comparison with similar fisheries/species).	There is an **objective basis for confidence** that the measures/strategy will work, based on **information** directly about the fishery and/or the species involved.	The strategy/comprehensive strategy is mainly based on information directly about the fishery and/or species involved, and a **quantitative analysis** supports **high confidence** that the strategy will work.
	Met?	**Yes**	**Yes**	**No**
Rationale		There are strategies in place that are designed to prevent UoA as they have been detailed in the scoring guidepost b. as it has been mentioned, these strategies are reflected in the various resolutions adopted by the Inter-American Tropical Tuna Commission (IATTC) and implemented within the fisheries management area for instance; Mobulid Rays – Resolution C-15-04 (2015); Several resolutions for sharks starting with C-05-03 C-21-06 in 2021 aim to protect silky sharks; resolution C-19-04 (2019) for sea turtles; resolution C11-02 for seabirds and all the measures estabisehd by AIDCP for dolphins. While these measures meet SG60 and SG80 standards by ensuring that the fisheries comply with the necessary conservation and management requirements, SG100 is not met because the strategies do not go beyond the minimum standards required for the protection and recovery of ETP species. Therefore, while the current strategy is expected to prevent the UoA from hindering the recovery of ETP species, it does not fully ensure that the recovery will exceed baseline expectation.		
d	**Management strategy implementation**			
	Guide post		There is some **evidence** that the measures/strategy is being implemented successfully.	There is **clear evidence** that the strategy/comprehensive strategy is being implemented successfully and **is achieving its objective as set out in scoring issue (a) or (b).**
	Met?		**Yes**	**No**
Rationale		There is evidence to suggest that the measures and strategies in place for the conservation of ETP species are being implemented successfully. The various resolutions adopted by the IATTC, such as **Resolution C-15-04** for mobulid rays, **Resolution C-19-04** for sea turtles, and the **AIDCP** for dolphins, are actively enforced, with specific provisions in place to ensure compliance by fishing vessels. These include the prohibition of retention of ETP species, the requirement for their safe release, and mandatory crew training for handling and releasing these species with minimal harm. Moreover, the IATTC regularly monitors and reports on the effectiveness of these measures, which indicates a clear commitment to ensuring their success. The fact that these resolutions remain active and enforceable, with no amendments or updates required since their adoption, also demonstrates their continued relevance and the ongoing implementation of their provisions.		

PI 2.3.2		The UoA has in place precautionary management strategies designed to: • **Meet national and international requirements.** • **Ensure the UoA does not hinder recovery of ETP species.** **Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species**		
		While the strategy is largely successful in meeting **SG60** and **SG80** standards for ETP species, further evidence may be needed to fully demonstrate the long-term recovery of these species beyond the minimum requirements. However, the foundational management measures in place appear to be effectively contributing to the protection of these species and minimizing the risk of harm from fishing activities.		
e	**Review of alternative measures to minimise mortality of ETP species**			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species.	There is a **regular** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.	There is a **biennial** review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		There is an ongoing research programme to improve understanding of the interactions and implications of the different EPO fisheries on non-target species, and ecosystemconsiderations is a standing item on the agenda of the IATTC's Science Advisory Committee (e.g., Griffiths & Fuller 2019b), while there is an annual meeting of the IATTC's Working Group on Bycatch (e.g., IATTC 2019f) where bycatch mitigation is considered explicitly. Together, it is considered that there is at least a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate – **SG60, SG80 andSG100 are met**		
Draft scoring range		**>80**		
Information gap indicator		**Information is enough to score the PI**		

PI 2.3.3 – ETP species information

PI 2.3.3		**Relevant information is collected to support the management of UoA impacts on ETP species, including:** • **Information for the development of the management strategy;** • **Information to assess the effectiveness of the management strategy; and** • **Information to determine the outcome status of ETP species**		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Information adequacy for assessment of impacts**			
	Guide post	Qualitative information is **adequate to estimate** the UoA related mortality on ETP species. OR	Some quantitative information is **adequate to assess** the UoA related mortality and impact and to determine whether the UoA may be a threat to	Quantitative information is available to assess with a high degree of certainty the **magnitude of UoA-related impacts, mortalities and injuries and the**

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**		
		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.	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.	**consequences for the status** of ETP species.
	Met?	**Yes**	**Yes**	**No**
Rationale		There is adequate quantitative information available to assess the UoA-related mortality and impact on ETP species, helping to determine whether the UoA poses a threat to their protection and recovery. Although the fishery will require to provide information for all the vessels included in the UoAs.		
b	**Information adequacy for management strategy**			
	Guide post	Information is adequate to support **measures** to manage the impacts on ETP species.	Information is adequate to measure trends and support a **strategy** to manage impacts on ETP species.	Information is adequate to support a **comprehensive strategy** to manage impacts, minimise mortality and injury of ETP species, and evaluate with a **high degree of certainty** whether a strategy is achieving its objectives.
	Met?	**Yes**	**Yes**	**No**
Rationale		The UoAs are monitored with 100% observer coverage under the AIDCP, providing detailed data on catches and species conditions at release, including sharks, mobulid rays, and sea turtles. This information is sufficient to track trends and manage impacts on these species, meeting SG60 for all and SG80 for sharks, turtles, seabirds, and rays. However, due to the lack of updated stock assessments, SG100 is not met. For dolphins, while the fleet reports zero mortality, potential unobserved mortality could impact management. The IATTC has emphasized the need for updated population data, and the team concludes that to meet SG 100 the fishery should report form all the vessels in the pre-assessment.		
Draft scoring range		**≥80**		
Information gap indicator		**Information sufficient to score PI**		

PI 2.4.1 – Habitats outcome

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Commonly encountered habitat status**			
	Guide post	The UoA is **unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
	Met?	**Yes**	**Yes**	**No**
Rationale		The UoAs operate across the EEZs established in **Table 5.1.1** and the high seas, using purse seine fishing with three techniques: dolphin sets, free-school, and FADs. Fishing occurs in the epipelagic water column, and due to the deep-water fishing areas (usually over 2000m), there is no interaction with benthic habitats. The gear is highly controlled and difficult to lose, reducing the risk of ghost fishing. There is deployment of FADs which could contact the seabed bur normally they are floating objects. Therefore, fishing activities occur in a pelagic environment with no significant impact on the seabed. The UoAs are unlikely to cause serious or irreversible harm to habitats, meeting SG60 and SG80. Although similar fisheries like Tunacons have conditions on habitat indicators, the assessment team will have to analysis more information and footprint from the vessels under assessment to reach SG 100 and minimizes any impact on these habitats.		
b	**VME habitat status**			
	Guide post	The UoA is **unlikely** to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is **evidence** that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
	Met?	**Yes**	**No**	**No**
Rationale		The assessment team considers that with the information provided for the pre assessment fishery that deploys FADs might not meet SG80 for the following reasons, even if it is highly unlikely to reduce the structure and function of VME habitats to a point of serious or irreversible harm: - FADs, while not directly targeting benthic habitats, can still cause indirect impacts on the surrounding ecosystem. The aggregation of fish around FADs may alter the movement of species and disrupt natural ecological processes, affecting the structure and function of the pelagic environment. This could potentially disrupt food chains or lead to unintended interactions with non-target species. - Deploying FADs increases the likelihood of bycatch, including vulnerable species such as sharks, rays, and sea turtles. While the direct interaction with benthic habitats may be minimal, FADs can still attract species that are not the intended target, and the unintended capture or harm to these species may be considered an unacceptable impact on biodiversity.		

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates		
		- FADs can influence local oceanographic conditions by altering the dynamics of currents and water temperature. In some cases, this may affect the distribution of species, including those that are integral to maintaining the health of VME habitats, leading to long-term changes in ecosystem balance. - While a single FAD deployment may not cause irreversible harm to VME habitats, the cumulative and potentially widespread use of FADs across large areas could lead to long-term, subtle effects that gradually alter ecosystem functions, making it difficult to guarantee that no harm is being done. - Even with 100% observer coverage, there may not be sufficient monitoring or data collection to fully assess the indirect impacts of FADs on the broader ecosystem. Without this data, it is difficult to conclusively demonstrate that the fishery's operations are not having a negative impact on VME habitats or their associated species, which is critical for meeting SG80. - In some cases, the use of FADs may impede the recovery of damaged or vulnerable marine habitats. If the long-term impacts of FADs on habitat regeneration are not well understood or have not been monitored, it could be argued that there is insufficient evidence to confirm that the UoA is not hindering habitat recovery. These factors could prevent fishery deploys FADs from meeting SG80, as there may be uncertainties or risks associated with the fishery's impact on VME habitats, even if the likelihood of serious or irreversible harm is considered low.		
c	**Minor habitat status**			
	Guide post			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?			**No**
Rationale		As not all the scoring guidepost meet SG 80, Sg 100 cannot be scored and there is insufficient evidence to demonstrate that the UoA is highly unlikely to reduce the structure and function of minor habitats to a point where there would be serious or irreversible harm, and therefore SG100 is not met.		
Draft scoring range		**60-79**		
Information gap indicator		More information sought - To meet SG80, detailed information on the specific impact of FADs on habitat structure and function is needed, including data on FAD deployment locations, their potential interactions with vulnerable marine ecosystems (VMEs), and evidence that the use of FADs does not cause significant or irreversible harm to these habitats. Additionally, information on the effectiveness of mitigation measures to minimize habitat damage from FADs would be required.		
Data-deficient? (Risk-Based Framework needed)		**No**		

PI 2.4.2 – Habitats management strategy

PI 2.4.2	There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
Scoring issue	**SG 60**	**SG 80**	**SG 100**

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
a	**Management strategy in place**			
	Guide post	There are **measures** in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a **partial strategy** in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a **strategy** in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	Met?	**Yes**	**No**	**No**
Rationale		The UoA operates in deep oceanic waters where purse seine vessels do not interact with the seafloor, and there is no impact on the commonly encountered habitat, the shallow pelagic environment. Fishing activities focus on the target species in the open ocean, influenced by oceanographic factors. While the UoA does deploy FADs, there is potential for lost or derelict FADs to impact coral reefs or marine protected areas (VMEs). The IATTC has adopted measures to manage FADs and limit their impact, including data collection, FAD design requirements, and limits on FAD deployments. These resolutions are expected to meet SG80, but as they are newly adopted, there is insufficient evidence to confirm their effectiveness, and SG80 is not yet met. Also more information about FADs number, characteristics and footprint will be needed to assess habitats impacts. Furthermore, the impact of FADs on minor habitats has been assessed at SG80, but no management strategy is required to meet SG60 or SG80 levels. Thus, SG100 is not met.		
b	**Management strategy evaluation**			
	Guide post	The measures are **considered likely** to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/habitats).	There is some **objective basis for confidence** that the measures/partial strategy will work, based on **information directly about the UoA and/or habitats** involved.	**Testing** supports **high confidence** that the partial strategy/strategy will work, based on **information directly about the UoA and/or habitats** involved.
	Met?	**Yes**	**No**	**No**
Rationale		There is insufficient objective evidence to have full confidence that the current measures or partial strategy will be effective in managing habitat impacts. While the IATTC has adopted several resolutions to regulate FAD use and limit impacts on habitats, these measures are relatively new and there is not enough data available yet to assess their actual effectiveness in the UoA. Additionally, the potential impacts on minor habitats, such as coral reefs or marine protected areas, due to lost or derelict FADs, have not been fully quantified or managed at this stage. Therefore, there is not enough information to confidently conclude that the measures will work as intended. SG60 is met but neither SG 80 nor SG 100.		
c	**Management strategy implementation**			
	Guide post		There is **some quantitative evidence** that the measures/partial strategy is being implemented successfully.	There is **clear quantitative evidence** that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a).
	Met?		**Yes**	**No**

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
Rationale		There is some quantitative evidence indicating that the measures and partial strategy are being implemented successfully. For example, the IATTC resolutions require observers to collect data on FADs, and there are established limits on the number of FADs that can be deployed by purse seine vessels. Additionally, resolutions like C-19-01 and C-21-04 include provisions for monitoring, reporting, and recovering FADs, which provide a structured approach to managing their impact. These measures are being actively enforced, and while the full effectiveness of these strategies may not yet be fully realized, the quantitative data collected so far supports the ongoing implementation of these management actions. SG 80 is met.		
d	**Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs**			
	Guide post	There is **qualitative evidence** that the UoA complies with its management requirements to protect VMEs.	There is **some quantitative evidence** that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	There is **clear quantitative evidence** that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	Met?	**Yes**	**No**	**No**
Rationale		There is insufficient quantitative evidence to confirm that the UoA complies with both its management requirements and the protection measures afforded to VMEs by other MSC UoAs or non-MSC fisheries, where relevant. While some measures have been implemented, such as data collection on FADs and restrictions on their use, there is not enough available data to comprehensively demonstrate full compliance with all required protection measures across all relevant fisheries.		

Draft scoring range	**60-79**
Information gap indicator	**More information sought** - Additional quantitative data on FAD usage, gear loss, and impacts on VMEs, as well as compliance reports from relevant fisheries, will be sought to assess adherence to management requirements and protection measures for VMEs. This includes verifying the effectiveness of regional conservation measures and ensuring proper monitoring and enforcement of these measures across all relevant fisheries

PI 2.4.3 – Habitats information

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Information quality**			
	Guide post	The types and distribution of the main habitats are **broadly understood.** OR	The nature, distribution and **vulnerability** of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA.	The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat		
		If CSA is used to score PI 2.4.1 for the UoA: Qualitative information is adequate to estimate the types and distribution of the main habitats.	OR **If CSA is used to score PI 2.4.1 for the UoA:** Some quantitative information is available and is adequate to estimate the types and distribution of the main habitats.	
	Met?	**Yes**	**Yes**	**No**
Rationale		The distribution and ecosystem characteristics of the EPO, including areas fished by the Ecuadorian fleet and on the high seas, are well-documented. The IATTC SAC-13-10 report on ecosystem considerations provides a comprehensive understanding of the ecosystem, including factors like thermal conditions and other variables that define species distribution and habitat areas. This fishery operates in the pelagic zone, where the primary habitat encountered is the open ocean pelagic environment. Consequently, the nature, distribution, and vulnerability of the main habitats in UoAs are understood at a level appropriate to the scale and intensity of the fishery, therefore, the fishery meets SG60 and SG80. While Vulnerable Marine Ecosystems (VMEs) or minor habitats of concern are not encountered during fishing operations, the vast scale of the IATTC convention area and limited mapping detail prevent this fishery from meeting SG100 at this pre-assessment.		
b	**Information adequacy for assessment of impacts**			
	Guide post	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear. OR **If CSA is used to score PI 2.4.1 for the UoA:** Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.	Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear. OR **If CSA is used to score PI 2.4.1 for the UoA:** Some quantitative information is available and is adequate to estimate the consequence and spatial attributes of the main habitats.	The physical impacts of the gear on all habitats have been quantified fully.
	Met?	**Yes**	**Yes**	**No**
Rationale		The nature, distribution, and vulnerability of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA. The distribution and ecosystem characteristics in the EPO area are well-known, as outlined in the IATTC SAC-13-10 – Ecosystem Considerations, which provides a broad understanding of the ecosystem and the factors that		

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat		
		define different areas and species distributions, including thermal conditions and other variables. This fishery operates in the pelagic region, and the commonly encountered habitat is the pelagic environment. Therefore, the habitats' nature, distribution, and vulnerability are well understood in relation to the scale and intensity of the UoA, and SG60 and SG80 are met. While VME or minor habitats of relevance are not encountered, the vast scale of the IATTC Convention Area and the lack of detailed mapping means that SG100 is not met.		
c	**Monitoring**			
	Guide post		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in all habitat distributions over time are measured.
	Met?		**No**	**No**
Rationale		There is inadequate information available regarding the potential impacts of FADs on VMEs, particularly with respect to their interactions with coral reefs in the EPO. While other set types in the fishery may meet the requirements, the purse seine fishery with FAD deployment needs to be assessed independently due to its unique gear type. FADs deployed in the EPO, especially those moving westward across the equator, have the potential to become beached on reefs in French Polynesia or drift into the WCPO. Although the general impacts of such beaching are understood and risks to coral reefs from marine debris have been analyzed, there remains uncertainty regarding the number of active FADs per vessel, the frequency of new FAD deployments, and the locations of lost or beached FADs. This lack of reliable data on the spatial extent, timing, and location of FAD interactions with coral reefs hinders a comprehensive understanding of their impact on these habitats. As such, the information available meets the SG60 level but does not satisfy the requirements for SG80.		
Draft scoring range		**60-79**		
Information gap indicator		**More information sought -** Further data is needed on the number, location, and timing of FAD deployments and their interactions with VMEs.		

PI 2.5.1 – Ecosystem outcome

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements underlying ecosystem structure and function		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Ecosystem status**			
	Guide post	The UoA is **unlikely** to disrupt the **key** elements underlying ecosystem structure and function to a point where there would be 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 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 serious or irreversible harm.
	Met?	**Yes**	**Yes**	**No**
Rationale		The fishery operates in the Eastern Tropical Pacific (EPO), where key ecosystem elements include physical factors driving productivity and predator dynamics, as well as trophic structure and function within the pelagic food web.		

PI 2.5.1	The UoA does not cause serious or irreversible harm to the key elements underlying ecosystem structure and function
	Environmental phenomena like El Niño and La Niña impact temperature, salinity, and nutrient levels, which affect the distribution of tuna and small pelagic species. The IATTC's SAC 13-10 Ecosystem considerations report highlights the influence of these conditions on marine life, with models like ETP7 and ETP8 used to assess fishing impacts. The IATTC's SAC-14-11 meeting in 2023 did not show significant changes to the ecosystem considerations compared to SAC-13, but it continued to emphasize the need for improved data collection and reporting on bycatch species in the tuna fisheries. There was ongoing progress in the analysis of fishing impacts, especially related to purse-seine and longline fisheries, with a notable focus on ecosystem impacts and bycatch data quality. The SAC-14-11 document outlined efforts to improve data collection from both large and small vessels, although challenges remain with inconsistent reporting formats and gaps in data provision. Despite these assessments, uncertainty remains regarding the ecological impact of FADs, preventing full compliance with SG100. Based on available information, fishery is unlikely to cause serious or irreversible harm to ecosystem structure or function, meeting SG60 and SG80, but not SG100.
Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**
Data-deficient? (Risk-Based Framework needed)	**No**

PI 2.5.2 – Ecosystem management strategy

PI 2.5.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Management strategy in place**			
	Guide post	There are **measures** in place, if necessary which take into account the **potential impacts** of the UoA on key elements of the ecosystem.	There is a **partial strategy** in place, if necessary, which takes into account **available information and is expected to restrain impacts** of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a **strategy** that consists of a **plan**, in place which contains measures to **address all main impacts of the UoA** on the ecosystem, and at least some of these measures are in place.
	Met?	**Yes**	**Yes**	**No**
Rationale		The fishery operates mainly in the East Pacific, influenced by environmental conditions such as El Niño and La Niña, which affect oceanographic factors like temperature, salinity, and nutrients. These conditions drive the productivity and distribution of commercial tuna and pelagic species, with key ecosystem elements being the physical factors influencing ecosystem dynamics and the trophic structure within the pelagic food web. While the fishery's physical impact on ecosystem productivity and predator dynamics is minimal, and SG60 and SG80 are met, there are gaps in information regarding the impact of FADs, especially those potentially interacting with coral reefs. Therefore, SG100 is not met due to uncertainty around FAD impacts. Regarding the trophic structure, the IATTC's management measures for tuna species like yellowfin and bigeye are based on scientific research and data collection programs, which are expected to		

PI 2.5.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function		
		mitigate the fishery's impact on the pelagic food web, achieving SG60 and SG80. However, the strategy is not considered fully cohesive and strategic enough to meet the MSC's SG100 standard.		
b	**Management strategy evaluation**			
	Guide post	The **measures** are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/ ecosystems).	There is **some objective basis for confidence** that the measures/ partial strategy will work, based on some information directly about the UoA and/or the ecosystem involved.	**Testing** supports **high confidence** that the partial strategy/ strategy will work, based on information directly about the UoA and/or ecosystem involved.
	Met?	**Yes**	**Yes**	**No**
Rationale		Physical factors driving ecosystem productivity and high order predator dynamics – A partial strategy to restrain the effects of the Fishery on the physical factors driving ecosystem productivity and predator dynamics is not necessary as these are major oceanographic features that will not be impacted by the fishery, therefore **SG60 and SG80 are met**. However, to meet SG 100 testing supports high confidence based on information from UoAs, as mentioned above some gaps of information are related to FADs and therefore, **SG100 is not met.** Trophic structure and function within the pelagic food web – Modelling of the eastern tropical Pacific pelagic food web by Watters et al. 2003 was updated by Griffiths & Fuller 2019a and then by Griffiths et al. 2021. These authors demonstrated that the pelagic ecosystem has been impacted by increasing levels of purse seine effort and FAD fishing since 1993, for example with reductions in the trophic level within catches. Griffiths & Fuller 2019a concluded that the ecosystem condition was not significantly impacted and would be relatively stable at current levels of effort, but the additional analysis by Griffiths et al. 2021 highlighted the risk posed by increasing levels of FAD effort over time. SG 60 and 80 are met but as some gaps of information are related to the catches on FADs, even though the fishery does not deploy them, **SG100 is not met**		
c	**Management strategy implementation**			
	Guide post		There is **some evidence** that the measures/partial strategy is being **implemented successfully**.	There is **clear evidence** that the partial strategy/strategy is being **implemented successfully and is achieving its objective as set out in scoring issue (a).**
	Met?		**Yes**	**No**
Rationale		There is evidence that the measures and partial strategies are being successfully implemented. The IATTC's comprehensive management measures, including those for tuna species like yellowfin and bigeye, have demonstrated success in regulating fishing efforts to sustain healthy stock levels. Additionally, ongoing data collection and research programs support monitoring ecosystem impacts, especially within the pelagic food web. These efforts are aligned with the objectives set out by the Antigua Convention, and while the strategy is not fully cohesive enough to meet SG100, it has been effective in ensuring SG60 and SG80 for key ecosystem elements. Therefore, the evidence suggests that the measures are working to restrain the impacts of the fishery on the ecosystem.		

PI 2.5.2	There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function
Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

PI 2.5.3 – Ecosystem information

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Information quality**			
	Guide post	Information is adequate to **identify** the key elements of the ecosystem.	Information is adequate to **broadly understand** the key elements of the ecosystem.	
	Met?	**Yes**	**Yes**	
Rationale		The fishery operates primarily in the East Pacific, influenced by environmental conditions such as El Niño, La Niña, and cold fronts, which affect oceanographic factors like temperature, salinity, and nutrient distribution. These changes influence the distribution of tuna and small pelagic species. The ecosystem, defined as the EPO cold tongue pelagic system, is driven by two key elements: physical factors influencing productivity and high-order predator dynamics, and trophic structure within the pelagic food web. The first key element, physical factors, is well-understood, with significant research on changes in ocean temperature, salinity, and productivity, particularly in response to interannual variations such as ENSO. These physical factors are critical for ecosystem functioning and predator dynamics. The information available is deemed adequate for this key element, thus meeting SG60 and SG80. The second key element, trophic structure, has been modeled and studied extensively. Research has shown that changes in species like squids and bullet tunas, which occupy middle trophic levels, have the most significant impact on the pelagic ecosystem. Recent studies have refined these models, including the potential effects of the EPO tuna fishery on target and non-target species. This information supports SG60 and SG80 compliance as well.		
b	**Investigation of UoA impacts**			
	Guide post	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but **have not been investigated** in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and **some have been investigated in detail.**	Main interactions between the UoA and these ecosystem elements can be inferred from existing information, and **have been investigated in detail.**
	Met?	**Yes**	**Yes**	**No**
Rationale		The main impacts of the UoA on the key ecosystem elements have been inferred from existing information, with some impacts investigated in detail. For example, research on the physical factors driving ecosystem productivity and predator dynamics in the Eastern Tropical Pacific (ETP) has shown that the major oceanographic features, such as temperature, salinity, and nutrient levels, are influenced by interannual variations like the El Niño Southern Oscillation (ENSO) and decadal oscillations (Fiedler & Lavin 2006, Watters et al. 2003).		

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem		
		These physical factors are vital drivers of ecosystem productivity and are unlikely to be significantly impacted by the fishery, ensuring compliance with SG60 and SG80. Similarly, the trophic structure and function of the pelagic food web have been extensively studied. The influence of middle trophic level species, such as squids and bullet tunas, on the ecosystem has been highlighted in various studies (Watters et al. 2003, Olson & Watters 2003, Griffiths & Fuller 2019). These studies, particularly the use of Ecopath with Ecosim models, have allowed for simulations of the potential ecological impacts of the fishery, ensuring that the UoA meets the required standards for SG60 and SG80. However, while the main impacts are well-documented, there is still uncertainty in some areas, particularly with regard to the effects of FADs and their interactions with the ecosystem, as these are still being monitored for more detailed understanding. Therefore, while the existing information provides a solid foundation for understanding the impacts on key ecosystem elements, there is still a need for continued data collection and analysis to fully assess the UoA's impacts.		
c	**Understanding of component functions**			
	Guide post		The main functions of the components (i.e. P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are **known**.	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the ecosystem are **understood**.
	Met?		**Yes**	**No**
Rationale		Tuna fishing in the EPO is a significant global fishery, and the region itself plays a major role in global climate variability. Extensive research has been conducted to understand the physical drivers of the cold tongue pelagic ecosystem and the impact of fishing on the trophic structure. This includes understanding the functions of key components like target species (yellowfin and skipjack tuna), secondary species (bonitos, silky sharks), ETP species (sharks, rays, turtles, dolphins), and pelagic habitats. As a result, the main ecosystem functions are well understood, and SG80 is met. However, while the impacts on these components are known, the full understanding of all ecosystem functions remains unclear. From a precautionary standpoint, this prevents SG100 from being met, as some uncertainties remain about the broader ecosystem impacts, especially regarding the interactions with FADs and their effects.		
d	**Information relevance**			
	Guide post		Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components **and elements** to allow the main consequences for the ecosystem to be inferred.
	Met?		**Yes**	**No**
Rationale		Adequate information is available on the impacts of the UoA on these ecosystem components, allowing some of the main consequences for the ecosystem to be inferred. Extensive research has been conducted on the physical drivers of the EPO cold tongue pelagic ecosystem, including studies of the oceanographic conditions influenced by phenomena such as El Niño and La Niña (Fiedler & Lavin, 2006; Watters et al., 2003).		

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem		
		The impacts of fishing activities on trophic structure and function within the ecosystem, including effects on target species like yellowfin and skipjack tuna, secondary species such as bonitos and sharks, and ETP species like turtles and dolphins, have been evaluated through studies of fishing effort and biological modeling (Griffiths & Fuller, 2019; Griffiths et al., 2021). These sources provide a solid foundation for understanding the impacts of the fishery on key ecosystem components, although some uncertainties remain about the full extent of these impacts, especially regarding FAD usage and long-term ecosystem changes. Thus, while there is sufficient information to infer the main consequences, uncertainties still exist that prevent a comprehensive understanding of all impacts. Therefore, SG80 is met, but SG100 is not fully achieved due to these remaining gaps.		
e	**Monitoring**			
	Guide post		Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.
	Met?		**Yes**	**No**
Rationale		Adequate data continue to be collected to detect any increase in risk levels. The IATTC has established a comprehensive monitoring and data collection program to assess the impacts of tuna fishing on the ecosystem. This includes the collection of data on target species such as yellowfin and skipjack tuna, secondary species (e.g., bonitos, sharks), and ETP (Eastern Tropical Pacific) species like turtles and dolphins. The monitoring program integrates physical oceanographic data to track environmental changes that may influence ecosystem dynamics (IATTC SAC 13-10, 2022; SAC14-11,2024). Additionally, the IATTC's Ecosystem and Bycatch Program is dedicated to research and monitoring ecosystem impacts from fishing, ensuring that any increases in risk to the ecosystem or species are detected. Models such as "ETP7" and "ETP8" also provide ecological risk assessments and indicators to detect changes over time in species populations and ecosystem health (Griffiths et al., 2021). Regular reviews of the monitoring data allow the IATTC to update conservation and management measures as needed to mitigate potential risks. This continuous data collection and analysis process supports the ongoing detection of any rising risks, ensuring that appropriate actions can be taken to maintain ecosystem health.		
Draft scoring range		**≥80**		
Information gap indicator		**Information sufficient to score PI**		

7.7. Principle 3

7.7.1. Principle 3 background

The jurisdictional categories that apply in this assessment for the target species are straddling stocks ('SSS') and highly migratory species ('HMS') and, therefore, the UoAs are subject to international cooperation to manage the target stock.

7.7.1.1. Regulatory framework applicable to the assessed fishery

Inter-American Tropical Tuna Commission (IATTC)

Tunas are highly migratory species therefore the management at international level is done by Regional Fisheries Management Organisations (RFMO). The Inter-American Tropical Tuna Commission (IATTC) is the RFMO responsible for the conservation and management of tuna and tuna -like species, associated species and their ecosystems, throughout the Eastern Pacific Ocean, from Canada, in the north, to Chile, in the South.

The IATTC was established in 1949. Current members are Belize, Canada, China, Colombia, Costa Rica, Ecuador, El Salvador, the European Union, France, Guatemala, Japan, Kiribati, Mexico, Nicaragua, Panama, Peru, Republic of Korea, Chinese Taipei, United States, Vanuatu, and Venezuela. Bolivia, Honduras, Indonesia, and Liberia are cooperating non-members.

The objective of the IATTC is to ensure the long-term conservation and sustainable use of tuna and tuna-like species and other species of fish taken by vessels fishing for tunas and tuna like species in the EPO, in accordance with the relevant rules of international law. In 1976, the IATTC's responsibilities were broadened to address the problems arising from the interaction of dolphin with tuna fisheries in the EPO. Defined policy objectives were to maintain a high level of tuna production while minimizing the incidental catch of dolphin, the stocks of which were to be kept at or above levels that ensure their survival. “The Agreement on the International Dolphin Conservation Program” (AIDCP) (1999), is implemented by the IATTC and it provides the Program secretariat.

The Republic of Ecuador has been a Contracting Party to the IATTC since 2004, having ratified its membership in May 2021; as well as to the Agreement on the International Dolphin Conservation Program (AIDCP).

The international laws mentioned in the Antigua Convention are the United Nations Convention on the Law of the Sea (UNCLOS) (1982); the Rio Declaration on Environment and Development and Agenda 21 adopted by the United Nations Conference on Environment and Development (1992); the Johannesburg Declaration and Plan of Implementation adopted by the World Summit on Sustainable Development (2002); the Code of Conduct for Responsible Fisheries of the Food and Agriculture Organization (FAO) 1995; the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, 1993 and International Plans of Action, both of which fall within the framework of the Code and the 1995 UN Fish Stocks Agreement (UNFSA).

A list of IATT Resolutions of relevance to the fishery under assessment are listed in **Table 7.7.1.1.1**

Table 7.7.1.1.1 List of IATTC Resolutions

C-02-03	Resolution C-02-03 Capacity of the tuna fleet operating in the Eastern Pacific Ocean
C-03-05	Resolution C-03-05 (Data Provision) requires that pertinent data are provided annually, including total catch in numbers, and weight if available, as well as fishing effort.
C-16-02	Resolution C-16-02. Harvest Control Rules for Tropical Tunas (Yellowfin, Bigeye, and Skipjack). 90th Meeting of the Inter-American Tropical Tuna Commission, La Jolla, California, 27 June–1 July 2016. Resolution C-16-02.

C-17-01; C-17-02	Conservation Measures for tropical Tunas in the EPO Conservation of Tuna in the EPO during 2017 (as amended by Res C-17-02).
C-21-04	Resolution C-21-04 (Conservation measures for tropical tunas in the Eastern Pacific Ocean during 2022-2024):
C-22-03	Amendment to Resolution C-12-07 on establishing a Program for transhipments by large -scale fishing vessels.
C-23-03	Amendment to Resolution C-99-07 on fish-aggregating devices.
C-23-06	Amendment to Resolution C-16-02 on harvest control rules for tropical tunas (yellowfin, bigeye and skipjack).

National/Flag State Management: Ecuador

Ecuador's Constitution of 2008 provides the legal foundations for the management of its fisheries. Article 14 declares as a public interest the preservation of the environment and the conservation of ecosystems. Article 395 declares "The State will ensure a sustainable model of development, environmentally balanced and respectful of cultural diversity, which preserves biodiversity and the natural regeneration of ecosystems, and ensures that the needs of present and future generations are met." This article together with article 396 also gives effect to the precautionary approach in natural resource management. Article 281 states: "Food sovereignty constitutes a strategic objective and an obligation of the state to ensure that individuals, communities, peoples, and nationalities achieve the self-sufficiency of healthy and culturally appropriate foods on a permanent basis.

The Organic Law for the Development of Aquaculture and Fisheries (Ley Orgánica para el Desarrollo de la Acuicultura y Pesca, Registro- LODAP) approved by Official Register No. 187 on April 21, 2020, constitutes the overarching legal framework to establish the legal regime for the development of aquaculture and fishing activities in all their phases of extraction, harvesting, reproduction, breeding, cultivation, cultivation, processing, storage, distribution, internal and external commercialization, and related activities such as the promotion of the production of healthy food; the protection, conservation, research, exploitation and use of hydrobiological resources and their ecosystems, through the application of the ecosystemic fishing approach in such a way as to achieve sustainable and sustainable development that guarantees access to food, in harmony with the principles and rights established in the Constitution of the Republic, and respecting traditional and ancestral knowledge and forms of production.

The General Regulation of the Organic Law for the Development of Aquaculture and Fisheries (Reglamento General a la Ley Orgánica para el desarrollo de la acuicultura y pesca) approved by the Executive Decree Nº 362, on February 5, 2022, provides the guidelines for compliance and correct application of the LODAP in the country, which has as its governing body the Advisory Council on Aquaculture and Fisheries, as an instance of non-binding technical advice, responsible for the monitoring, surveillance and evaluation of public policies in aquaculture and fisheries, as well as promoting and encouraging dialogue between public and private actors in matters of competence. The General regulation also considers the implementation of roundtable dialogues, as an instrument of information sharing and participatory decision making.

Ecuador has passed regulations associated with Ecuador's Organic Law for the Development of Aquaculture and Fisheries (April 2020) and in support of their response to an EU "yellow card" also received in 2019. A significant addition is Agreement No. MPCEIP-SRP-2023-0142-A that establishes a National Control Plan – Risk Management System in Fisheries. A current list of fisheries regulations is available here: https://srp.produccion.gob.ec/repositorio-de-normativas-pesqueras/.

7.7.1.2. Entities and institutions involved in the management of the assessed fishery

The organization of the IATTC (see **Figure 7.6.1.2.1**) includes research and management, having its own scientific staff, headed by a Coordinator of Scientific Research, which provides advice regarding fisheries management, data collection and research to the Scientific Advisory Committee (SAC) and the Commission, as well as assistance and capacity building to its developing members. In addition to a

number of field offices in several countries, the Commission has its own research laboratory at Achotines, in Panama.

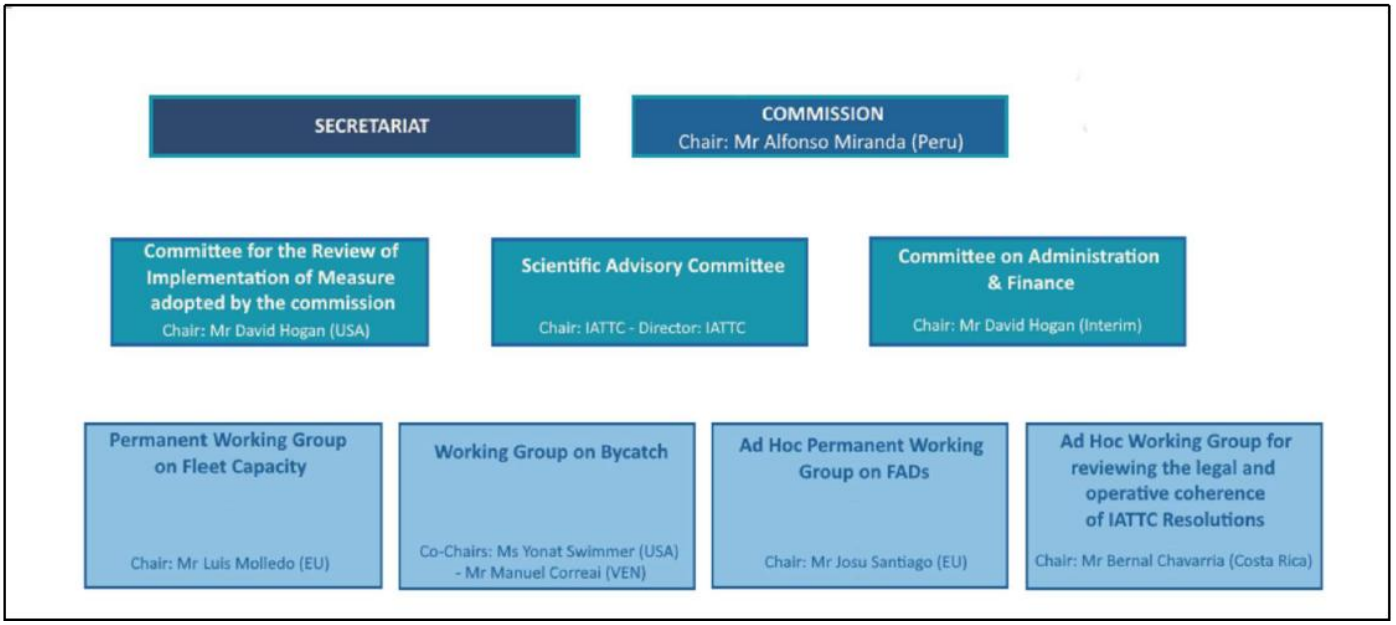


Figure 7.6.1.2.1 IATTC Organigram. Source: https://www.iattc.org/en-US/About/Role#organigram

The Working Group on Bycatch has been replaced by the Permanent Working Group on Ecosystem and Bycatch (EBWG) that was formally created in 2022 through the adoption of Resolution C-22-06. Among the objectives of this WG is to evaluate and recommend measures and best practices to avoid, reduce and minimize catch and mortality of non-target species, effective methods for safe handling practices and release of non-target species, and the effects of fishing on endangered species.

Ecuador

The Vice Ministry of Aquaculture and Fisheries (Viceministerio de acuicultura y pesca)

The Vice Ministry under the Ministry of Production, Exterior, Investment and Fisheries (MPCEIP), regulates, promotes and manages the use of fishing and aquaculture activities, based on policies, strategies, standards and technical and legal instrumentation for this purpose. The Vice Ministry must issue regulations, agreements and resolutions related to the direction and control of aquaculture activity in the country as well as to coordinate with public and private entities for the development of aquaculture and fishing activities. The most relevant Secretariats and Directorates for the assessed fishery are listed below:

- Under Secretariat for quality and safety (Subsecretaría de Calidad e Inocuidad - SCI). SCI manages regulatory processes of safety regulation, monitoring and certification related with the quality and safety of hydrobiological products, through the implementation of systems, standards, and regulations to guarantee the quality of the production chain of bio aquatic products.
- Fisheries and Aquaculture Policies Directorate (Dirección de Política Pesquera y Acuícola - DPPA). DPPA oversees the design, proposal and evaluation of management regulations, plans, programs, national and international cooperation agreements to regulate and promote the activities related to fisheries and aquaculture. In order to guarantee the sustainable and responsible use of resources in all their phases, the DPPA uses scientific instruments and information.
- Under Secretariat for Fishery Resources (Subsecretaría de Recursos Pesqueros - SRP). Is responsible for the supervision and implementation of the of the national fisheries policy, guarantees compliance with fisheries laws and regulations, elaborates fisheries development plans and programs, coordinates the activities of the public and private sectors, manages fisheries financial credit, endorse reports and plans of companies in the fisheries sector, and commissions studies on the activity, management, and development of the fishing sector. Moreover, the SRP establishes actions to prevent, deter and eliminate illegal unreported and unregulated fishing Additionally, SRP represents Ecuador in international meetings including the IATTC. In the case of the dolphinfish

fishery, the SRP is in charge of monitoring all landings and also run the observer program. The SRP is composed of the following Divisions: Fisheries Control Directorate (Dirección de Control Pesquero - DCP), Artisanal Fisheries Directorate (Dirección de Pesca Artesanal - DPA) and Industrial Fisheries Division (Dirección de Pesca Industrial - DPI).

National Directorate of Aquatic Spaces (Dirección Nacional de los Espacios Acuáticos - DIRNEA)

In May 2008, with executive decree No. 1111 the National Directorate of Aquatic Spaces was established as part of the General Navy Command (Comandancia General de Marina) and depends on the Ministry of Defence. The DIRNEA is the national maritime authority in aquatic spaces and is responsible for on-the water fisheries enforcement and for satellite monitoring that it carries out in coordination with SRP.

Advisory Council of Aquaculture and Fisheries (Consejo Consultivo de Acuicultura y Pesca)

Created by the LODAP 2020, is the non-binding technical advisory body, responsible for monitoring, overseeing and evaluating public policies on aquaculture and fisheries, as well as promoting and promoting dialogue between public and private actors in matters of competition. The Advisory Council shall be chaired by the governing body for national aquaculture and fisheries policy. The Advisory Council is comprised by government officials and representatives of producer organizations, aquaculturists, fishermen, marketers, economic agents, and related representatives.

7.7.1.3. Institutions or bodies for fisheries research and NGOs

IAATC

The IATTC has its own scientific staff headed by a Coordinator of Scientific Research that provides scientific information to the SAC (See **Figure 7.6.1.2.1**).

Ecuador

The IPIAP was created on December 5th, 1960, it has its own legal structure, patrimony and financing resources and is ascribed to the Ministry of Production, Exterior, Investment and Fisheries. The IPIAP aims to provide information and scientific-technological knowledge to guarantee the rational use of hydrobiological resources and their ecosystems, providing management and conservation measures to the competent authorities, contributing with the sustainable development of the fishing and aquaculture sector.

7.7.2. Principle 3 Performance Indicator scores and rationales

PI 3.1.1 – Legal and/or customary framework

PI 3.1.1		**The management system exists within an appropriate and effective legal and/or customary framework which ensures that it:** • **Is capable of delivering sustainability in the UoA(s);** • **Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and** • **Incorporates an appropriate dispute resolution framework**		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Compatibility of laws or standards with effective management**			
	Guide post	There is an **effective national legal system** and a **framework for cooperation** with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an **effective national legal system** and **organised and effective cooperation with other parties**, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an **effective national legal system** and **binding procedures governing cooperation with other parties** that deliver management outcomes consistent with MSC Principles 1 and 2.
	Met?	**Yes**	**Yes**	**No**

<table>
<tr><td colspan="2">PI 3.1.1</td><td colspan="3">The management system exists within an appropriate and effective legal and/or customary framework which ensures that it:
• Is capable of delivering sustainability in the UoA(s);
• Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and
• Incorporates an appropriate dispute resolution framework</td></tr>
<tr><td colspan="2">Rationale</td><td colspan="3">The Antigua Convention of 2003 governs fishing for tuna and tuna like species on the high seas and in zones of national jurisdiction (Medley et al. 2021). The objective of the Antigua Convention is to ensure the long-term conservation and sustainable use of the fish stocks in the Convention area in accordance with the relevant rules of international law. The Antigua Convention explicitly recognizes the 1982 United Nations Convention on the Law of the Sea (UNCLOS), the Rio Declaration on Environment and Development and Agenda 21, the Johannesburg Declaration and Plan of Implementation adopted by the World Summit on Sustainable Development (2002), the FAO Code of Conduct for Responsible Fisheries (1995), including the 1993 FAO Compliance Agreement and International Plans of Action adopted by FAO within the framework of the Code of Conduct, and the 1995 UN Fish Stocks Agreement (UNFSA). This promotes the implementation of these international agreements within its area of jurisdiction to deliver management outcomes consistent with MSC Principles 1 and 2. SG60 and SG80 are met. SG100 is not met because the agreements between countries is by consensus and therefore co-operation is effectively not binding.

Ecuador ratified the UN Convention on the Law of the Sea (2012), the UN Fish Stocks agreement (2016), and the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (2019).
The 1974 law was replaced in April 2020 by the Organic Law for the Development of Aquaculture and Fishing which consolidated and updated national law to ensure compliance with the international and regional rules applying to the conservation and management of fishing resources. The Resolutions and Recommendations made by the IATTC for the conservation of tunas are formally adopted by the Ecuadorian government (MPCEIP-SRP-2019-0027-A). Resolutions are translated into regulations through Ministerial agreements issued by the Under Secretariat for Fishery Resources. Ecuador’s national legal framework for fisheries and the management of fisheries subject to international cooperation meets SG 80.</td></tr>
<tr><td rowspan="3">b</td><td colspan="4">Resolution of disputes</td></tr>
<tr><td>Guide post</td><td>The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.</td><td>The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the UoA.</td><td>The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes, which is appropriate to the context of the fishery and has been tested and proven to be effective.</td></tr>
<tr><td>Met?</td><td>Yes</td><td>Yes</td><td>No</td></tr>
<tr><td colspan="2">Rationale</td><td colspan="3">IATTC
Several mechanisms exist for dealing with legal disputes at the international level. Part VII of the Antigua Convention establishes a framework for dispute resolution. Although this does not specify a concrete mechanism, it does define an avenue for arriving at a solution in the case of a difference between two or more members of the Commission. Disputes can be dealt with at the IATTC annual meetings of the Parties through consultation and conciliation. Technical disputes might be resolved by an appropriately composed expert or technical panel. As a last step, disputes might be resolved through either the International Court of Justice or the International Tribunal for the Law of the Sea (ITLOS), though this recourse is most likely to be used by states which have ratified the 1995 UN Fish Stocks Agreement (UNFSA).

Ecuador
The Ecuadorian judicial system is governed by statutory law, not by common law or judicial precedents. The General Organic Code of Procedures which came into force in 2016 and instituted</td></tr>
</table>

<table>
<tr><td colspan="2">PI 3.1.1</td><td colspan="3">The management system exists within an appropriate and effective legal and/or customary framework which ensures that it:
Is capable of delivering sustainability in the UoA(s);
Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and
Incorporates an appropriate dispute resolution framework</td></tr>
<tr><td colspan="2"></td><td colspan="3">a new procedural system for all trial proceedings, except criminal and constitutional matters. The Administrative Organic Code enacted in 2017 and amended on January 21, 2022, aims to regulate the exercise of the administrative function of public sector agencies, through mechanisms of extraordinary appeals and challenges. Likewise, Article 134 establishes that administrative claims and disputes for which no specific procedure is provided, will be resolved through an administrative procedure. Thus, despite there is no mechanism for the resolution of disputes apparent in Ecuador’s fisheries laws and related instruments, the Organic Administrative Code is the mechanism through which disputes in Ecuador’s fisheries law would be resolved.
SG60 and 80 are met because the management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes arising within the system which is considered to be effective in dealing with most issues and that is appropriate to the context of the UoA. SG 100 is not met because there is no evidence that the mechanism has been tested and proven to be effective in the context of the fishery</td></tr>
<tr><td rowspan="3">c</td><td colspan="4">Respect for rights</td></tr>
<tr><td>Guide post</td><td>The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</td><td>The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</td><td>The management system has a mechanism to formally commit to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.</td></tr>
<tr><td>Met?</td><td>Yes</td><td>Yes</td><td>No</td></tr>
<tr><td colspan="2">Rationale</td><td colspan="3">At the IATTC level, legal rights of people dependent on fishing for food or livelihood are protected through national interests of Parties to the Convention. The Convention deals with the rights of a State’s access to resources rather than individuals. Thus, this SI is assessed only at National level.

Ecuador
Article 281 of Ecuador’s constitution states: "Food sovereignty constitutes a strategic objective and an obligation of the state to ensure that individuals, communities, peoples, and nationalities achieve the self-sufficiency of healthy and culturally appropriate foods on a permanent basis”.
Furthermore, Ecuador, through the LODAP and its General Regulations, establishes the mechanisms to manage fishing resources, guaranteeing fishermen's access to the activity within a clear and accessible framework. Article 7, paragraph 42 and section II of the LODAP establishes the characteristics of artisanal fishing and indicates the duties of fishermen. Likewise, Article 7, paragraph 46, and Section II of LODAP states the characteristics of industrial fishing.

Both the international and national management systems meets the requirement for SG60 and SG80.</td></tr>
<tr><td colspan="3">Draft scoring range</td><td colspan="2">≥80</td></tr>
<tr><td colspan="3">Information gap indicator</td><td colspan="2">Information sufficient to score PI</td></tr>
</table>

PI 3.1.2 – Consultation, roles, and responsibilities

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Roles and responsibilities**			
	Guide post	Organisations and individuals involved in the management process have been identified. Functions, roles, and responsibilities are **generally understood**.	Organisations and individuals involved in the management process have been identified. Functions, roles, and responsibilities are **explicitly defined and well understood for key areas** of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles, and responsibilities are **explicitly defined and well understood for all areas** of responsibility and interaction.
	Met?	**Yes**	**Yes**	**No**
Rationale		**IATTC** Functions, roles and responsibilities are explicitly defined at the international level. The IATTC was established to define roles and responsibilities for its contracting parties and co-operating non-contracting parties. The performance of the Secretariat is sound and well regarded as both efficient and effective by the Parties. Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are explicitly defined and well understood for all areas of responsibility and interaction meeting SG100. **Ecuador** At national level, the roles and responsibilities of organisations and individuals who are involved in the management process are defined in the LODAP and the Executive Decree 362, including the mechanisms to ensure the necessary interinstitutional coordination. The highest authority in matters of fisheries management in the country is the Vice-Ministry of Aquaculture and Fisheries that is part of the Ministry of Production, Exterior, Investment and Fisheries. The Vice-Ministry regulates, promotes and manages the use of fishing and aquaculture activities, based on policies, strategies, standards and technical and legal instrumentation for this purpose. The Under Secretariat for Fishery Resources (SRP, Spanish acronym) is part of the Vice-Ministry of Aquaculture and Fisheries, and is responsible for the supervision and implementation of the of the national fisheries policy, guarantees compliance with fisheries laws and regulations, elaborates fisheries development plans and programs, coordinates the activities of the public and private sectors, manages fisheries financial credit, endorse reports and plans of companies in the fisheries sector, and commissions studies on the activity, management, and development of the fishing sector. The non-statutory National Tuna Plan establishes roles, responsibilities, and accountability against actions. Based on the above the team considers that in Ecuador, organizations and individuals in the management process are clearly identified and its functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction. Thus, **SG60 and SG80 are met.**		
b	**Consultation processes**			
	Guide post	The management system includes consultation processes that **obtain relevant information** from the main affected parties, including **local knowledge**, to inform the management system.	The management system includes consultation processes that **regularly seek and accept** relevant information, **including local knowledge**. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that **regularly seek and accept** relevant information, including **local knowledge**. The management system demonstrates consideration of the information and **explains how it is used or not used**.

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
	Met?	**Yes**	**Yes**	**No**
Rationale		**IATTC** The **IATTC** holds a meeting every year, and specialist working groups (comprising scientists and specialists from the contracting parties) convene meetings on a regular (usually annual) basis. Information from these meetings is used by decision-makers and forms the basis of the management advice provided by IATTC. “Local knowledge” at the international level is assumed to refer to national information and experience. IATTC allows for participation by non-members and observers, including NGOs and ensures they have timely access to relevant information. The IATTC management system demonstrates consultation processes that regularly seek and accept relevant information, including local knowledge. The management system demonstrates consideration of the information obtained demonstrates consideration of the information obtained. SG 80 is therefore met. **Ecuador** The Organic Law of Transparency and Access to Public Information approved on May 18, 2004, establishes in Article 4, letter "e", that the transparent management of public information must be guaranteed, enabling citizen participation in decision making of general interest. The LODAP, includes the Advisory Council of Aquaculture and Fisheries as part of the fisheries management system (Article 11). This Council is a forum for dialogue, consultation and agreement between the public and private sectors, and its objective is to advise the fishing sector on monitoring and compliance with internal agreements to facilitate efficient relations between the different actors in the production chain. With the approval of the LODAP and its regulations, it is established that the spaces for dialogue and participation for the NAPs are provided through dialogue roundtables. Ecuador’s government adopted as public policy the National Tuna Action Plan in December 2019. The National Tuna Action Plan was developed with stakeholder input and consultative meetings. Stakeholders are invited to participate in meetings that inform the Ecuadorian position on mater being discussed at IATTC meetings. **SG60 and SG80 are met**.		
c	**Participation**			
	Guide post		The consultation process **provides opportunity** for all interested and affected parties to be involved.	The consultation process **provides opportunity and encouragement** for all interested and affected parties to be involved, and **facilitates** their effective engagement.
	Met?		**Yes**	**No**
Rationale		**IATTC** Consultation occurs at several levels within the **IATTC** management system. The opportunity to become a Contracting Party or Co-operating Non-contracting Party is open to all, including non-states. Membership has increased over time and there is a high level of participation. **Ecuador** According to article No. 95 of the Constitution citizens, individually and collectively, will participate as protagonists in decision-making, planning and management of public affairs. Moreover article No. 227 states that the public administration is a service to the community that is governed by the principles of effectiveness, efficiency, quality, hierarchy, decentralization, coordination, participation, planning, transparency and evaluation, coordination, participation, planning, transparency and evaluation. The LODAP, includes the Advisory Council of Aquaculture and Fisheries as part of the fisheries management system (Article 11). This Council is a forum for dialogue, consultation and agreement between the public and private sectors. The General Regulation of the LODAP in the Chapter II Section I details the possibility of setting up dialogue roundtables for the fishing sector as an instrument for the participation of public-private		

PI 3.1.2	**The management system has effective consultation processes that are open to interested and affected parties. The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties**
	sectors in decision-making process. Ensuring that the process is participatory, transparent, inclusive, multidisciplinary and scientifically based, for the design, socialization, dissemination of proposals of the National Action Plans of the fishing sector, to guarantee the sustainability of the fishery with responsibility and awareness of all actors. The roundtable dialogue must promote inclusive participation of all stakeholders in the governance of the fishery. It can provide recommendations to the leading agency of national aquaculture and fisheries policy appropriate measures for the management and management of the fishery, considering the biological-fishery, oceanographic, environmental, social and economic status. Private sector stakeholders in the industrial tuna fishery tend to be members of one or more of three organizations: (i) the Association of Tuna Boat Owners (ATUNEC), (ii) the National Chamber of Fisheries (CNP), and (iii) the Chamber of Tuna Processors (CEIPA). The tuna industry is vertically integrated, and these organisations include most of the producers, processors, exporters and traders related to the Ecuadorian fisheries. Key NGOs engaged with the fishery are WWF, Conservation International and the International Seafood Sustainability Foundation (ISSF). Consultation processes provide an opportunity for all interested and affected parties to be involved **meeting SG80**. There is insufficient evidence to concluded that Ecuador facilitates the effective engagement of all interested and affected parties and therefore SG100 cannot be awarded.
Draft scoring range	**≥80**
Information gap indicator	**Information sufficient to score PI**

PI 3.1.3 – Long term objectives

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with the MSC Fisheries Standard, and incorporates the precautionary approach		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Objectives**			
	Guide post	Long-term objectives to guide decision-making, consistent with the MSC Fisheries Standard and the **precautionary approach,** are **implicit** within **management policy**.	**Clear** long-term objectives that guide decision-making, consistent with the MSC Fisheries Standard and the **precautionary approach**, are **explicit** within **management policy**.	**Clear** long-term objectives that guide decision-making, consistent with the MSC Fisheries Standard and the **precautionary approach**, are **explicit** within **and required by** management policy.
	Met?	**Yes**	**Yes**	**Yes**
Rationale		The **IATTC** Antigua Convention, Article II has the states a clear long-term objective to "…ensure the long-term conservation and sustainable use of the fish stocks covered by this Convention, in accordance with the relevant rules of international law." The IATTC Convention provides clear, long-term objectives that guide decision making under Principle 1. The long-term objectives for each stock are clear enough that the science-based advice and management of these stocks can be evaluated. Protection for all resources within the same ecosystem is provided for, consistent with Principle 2. In Article VII paragraph 1(f), the functions of the Commission provide for measures to protect all species belonging to the same ecosystem as the target stocks, to reduce bycatch (specifically co-ordinate with the AIDCP), develop more "environmentally safe" fishing gears and apply the precautionary approach, all of which meet requirements under Principle 2. In addition, the Convention explicitly requires that the Commission promote the application of the provisions under the FAO Code of Conduct, which includes the ecosystem approach to fisheries management as well as many of the same requirements as the MSC Principles and Criteria. Article 14 of the Constitution of the Republic of Ecuador establishes "The preservation of the environment, the conservation of ecosystems, biodiversity and the integrity of the country's genetic heritage, the prevention of environmental damage and the recovery of degraded natural spaces are declared to be in the public interest". Article 395 recognizes as environmental principles, in paragraph 1, "The State shall guarantee a sustainable model of development, environmentally balanced and respectful of cultural diversity, that conserves biodiversity and the capacity for natural regeneration of ecosystems and ensures the satisfaction of the needs of present and future generations". Finally, the Constitution of the Republic of Ecuador also embraces the precautionary principle in its article 396 and stipulates that the State will adopt the appropriate policies and measures that avoid negative environmental impacts, when there is certainty of damage. In case of doubt about the environmental impact of any action or omission, even if there is no scientific evidence of the damage, the State will adopt protective, effective and timely measures. Article 2 of the LOPA indicates that one of its objectives is the protection, conservation, research, exploitation, and use of hydrobiological resources and their ecosystems, through the application of the fishing ecosystem approach in such a way that sustainable development is achieved and sustainable that guarantees access to food, in harmony with established principles and rights in the Constitution of the Republic. The general objectives of the Action Plans are to establish regulations based on scientific knowledge, to improve the processes of participation and control of the fisheries and to ensure the conservation of the target species and to minimize the impact of the activity on the environment. Considering that the Antigua Convention is the overarching management policy for the UoAs, it is demonstrate that clear long-term objectives guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach, are explicit within and required by management policy for all UoAs. **SG100 is met**.		
Draft scoring range		**≥80**		

PI 3.1.3	The management policy has clear long-term objectives to guide decision-making that are consistent with the MSC Fisheries Standard, and incorporates the precautionary approach
Information gap indicator	**Information sufficient to score PI**

PI 3.2.1 – Fishery-specific objectives

PI 3.2.1		The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC Principles 1 and 2		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Objectives**			
	Guide post	**Objectives**, which are broadly consistent with achieving the outcomes expressed by MSC Principles 1 and 2, are **implicit** within the fishery-specific management system.	**Short and long-term objectives**, which are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, are **explicit** within the fishery-specific management system.	**Well-defined and measurable short- and long-term objectives**, which are demonstrably consistent with achieving the outcomes expressed by MSC Principles 1 and 2, are **explicit** within the fishery-specific management system.
	Met?	**Yes**	**Yes**	**Partial**
Rationale		The tuna fishery in **Ecuador's** EEZ and on the adjacent high seas is managed within the IATTC framework. The Resolutions and Recommendations made by the IATTC for the conservation of tunas in the EPO are formally adopted by the Ecuadorian government. Resolutions are translated into regulations through Ministerial agreements issued by the Under Secretariat for Fishery Resources. Ministerial Agreement 174 adopts and adapts all IATTC's conservation measures and includes them in the Ecuadorian legal system. There is a long-term management plan to limit fishing capacity to sustainable levels (C-02-03). Short-term objectives are clearly laid out and are measurable for purse seine at least. IATTC now has a closed vessel registry which should help prevent increases in capacity, if not reduce it. Each resolution has short-term objective which are explicit and well defined. **SG60 and SG80 are met**. However, explicit long and short-term objectives are not necessarily always well-defined or precisely measurable, particularly in relation to achieving MSC Principle 1. SG 100 is partially met since well-defined and measurable short and long-term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are explicit within the fishery-specific management system.		
Draft scoring range		**≥80**		
Information gap indicator		**Information sufficient to score PI**		

PI 3.2.2 – Decision-making processes

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Decision-making processes**			
	Guide post	There are **some** decision-making processes in place that result in **measures** and **strategies** to achieve the fishery-specific objectives.	There are **established** decision-making processes that result in **measures** and **strategies** to achieve the fishery-specific objectives.	
	Met?	**Yes**	**Yes**	
Rationale		**ICCAT** Decision making functions of the IATTC are set out in Article IX of the Antigua Convention that came into force in 2010. Information used for decision-making is published. Decisions are made by consensus and there is no objection or opting out procedure. Resolutions are binding, but recommendations are non-binding. All management measures apply equally inside EEZ and on high seas. Parties enforce management measures within their own EEZ. Members can vote, but cooperating non-members are not entitled to take part in voting. Clear evidence of the established decision-making processes that result in measures and strategies to achieve the fishery-specific objectives is provided by a record evolving IATTC resolutions and recommendations. **SG60 & SG80 are met**.		
b	**Responsiveness of decision-making processes**			
	Guide post	Decision-making processes respond to **serious issues** identified in relevant research, monitoring, evaluation, and consultation, in a transparent, timely and adaptive manner, and take some account of the wider implications of decisions.	Decision-making processes respond to **serious and other important issues** identified in relevant research, monitoring, evaluation, and consultation, in a transparent, timely, and adaptive manner, and take account of the wider implications of decisions.	Decision-making processes respond to **all issues** identified in relevant research, monitoring, evaluation, and consultation, in a transparent, timely, and adaptive manner, and take account of the wider implications of decisions.
	Met?	**Yes**	**Yes**	**No**
Rationale		**IATTC** The decision-making is transparent. IATTC resolves most disputes by consensus at its annual meetings. While the outcome of such decisions is transparent as it is published as a resolution from the annual meetings, and initial positions and the information used for the basis of the decision is available (as technical reports provided to the meeting or as proposals for resolutions from some Parties), exactly how a decision is reached is not always evident. The system makes sure that all Commission members are fully informed of the issues under consideration and are able to participate in informed decision-making. The decision-making is adaptive in that decisions are evaluated by the various specialist meetings and feedback is provided to the Commission. The Commission responds appropriately by approving new resolutions addressing serious and other important issues. **SG60 & SG80 are met**.		
c	**Use of precautionary approach**			
	Guide post		Decision-making processes use the **precautionary approach** and are based on best available information.	
	Met?		**Yes / No**	

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery		
Rationale		Article IV of the **IATTC** Antigua Convention requires that the members of the Commission, directly and through the Commission, apply the precautionary approach, as described in the relevant provisions of the Code of Conduct and/or the 1995 UN Fish Stocks Agreement. Specifically, the Convention requires that Commission be more cautious when information is uncertain, unreliable, or inadequate and does not use the absence of adequate scientific information as a reason for postponing or failing to take conservation and management measures. Article 4 of the **Ecuador's** LODAP states that the precautionary approach and the fishing ecosystem approach must be observed, without prejudice to those established in the Constitution of the Republic. Besides, Article No. 96 of the LODAP sets that fishery management measures will be adopted after a scientific technical report from the IPIAP, and socialization with the fishing sector based on the best scientific evidence available and ancestral knowledge in accordance with the population conditions of the resources and the state of the fisheries. **SG80 is met.**		
d	**Accountability and transparency of management system and decision-making process**			
	Guide post	Some information on the fishery's performance and management action is generally available on request to stakeholders.	**Information on the fishery's performance and management action is available on request**, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation, and review activity.	Formal reporting to all interested stakeholders **provides comprehensive information on the fishery's performance and management actions** and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation, and review activity.
	Met?	**Yes**	**Yes**	**No**
Rationale		Article XVl of the Antigua convention requires the **IATTC** to promote transparency in the implementation of this Convention in its decision making processes and other activities. Reports of the plenary sessions of meetings are published formally and are publicly available. All information available for the decision making is published, allowing any stakeholder to draw their own conclusions, and there is frequent feedback from NGOs, scientists and other stakeholders via participation in IATTC standing committees and working groups. However, while reports are available, it is not clear that they provide comprehensive information on the fishery's performance and management actions and describe how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity. There is no formal, detailed explanation linking the information provided to the decision that results. Decisions of the IATTC are presented in the resolutions, with minimal justification (Medley et al. 2021). **Only SG60 & SG80 are met**.		
e	**Approach to disputes**			
	Guide post	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability of the fishery.	The management system or UoA is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or UoA acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	**Yes**	**Yes**	

PI 3.2.2	**The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery**
Rationale	IATTC is the overarching management authority. Article XXV of the Antigua Convention sets out clear mechanisms for the resolution of disputes. There is no evidence that other entities flout the law, with the notable exception of particular fishing companies and fishing vessels, which are listed on the IUU fishing list. Therefore, excluding these, IATTC and its Parties **meet SG60**. Given that there are no current outstanding judicial disputes and that so far members have avoided resorting to using international law to settle disputes (SCS, 2022), the management system **meets SG80**.
Draft scoring range	**≥80**
Information gap indicator	**More information sought:** *- Check if there are court challenges affecting the fishery.* *- Check if the management system complies in a timely fashion with judicial decisions arising from legal challenges.*

PI 3.2.3 – Compliance and enforcement

PI 3.2.3		Monitoring, control, and surveillance (MCS) mechanisms ensure the management measures in the UoA are enforced and complied with		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**MCS system**			
	Guide post	Monitoring, control and surveillance **mechanisms** exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance **system** has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A **comprehensive** monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	**Yes**	**Yes**	**No**
Rationale		**IATTC** At the regional level, the IATTC seeks to improve compliance mainly via vessel registration, but procedures also include catch and effort monitoring and diplomatic and other pressures applied to nation states. **Ecuador** An important role for all Flag States is implementation of IATTC MCS requirements under their commitment to IATTC and this reflected in Ecuador's fisheries legislation. According to the LODAP monitoring, control and surveillance (MCS) activities must be carried out in all places where fishing and related activities are developed and throughout all the phases of the productive chain of the fishing activity. The Ecuadorian Fisheries Authority must have free access to the facilities, vessels, docks and any other premises where the activity is carried out and must have access to the information required for the fulfillment of its attributions. To ensure the MCS of fishing activities, the LODAP establishes diverse mechanisms such as: - The implementation of MCS systems. - Inspections of ports and vessels. - Technical reports from government institutions such as the IPIAP, on-board observers and the Satellite Monitoring Center (Centro de Monitoreo Satelital- CMS). - Fishing logbook, image recording system and a weighing system. To track, identify and localize industrial and artisanal fishing vessels must have a tracking devise that has to be authorized by the National Defense entity, the information about the location of the vessels is managed by the Administration of the Monitoring Center (Administración del Centro de Monitoreo). The Administration of the Monitoring Center can share the tracking information with the IPIAP. On the landing sites the SRP through the Directorate of Fisheries Control (DCP) carries out permanent monitoring of hydrobiological resources, applied 365 days a year under the framework of the "Monitoring, Control and Surveillance System (MCS)". All in situ procedures related to the MCS of fishery resources are applied through the Fisheries Inspectors at the national level, to maintain proper traceability of resources, in addition to strengthening the fight against IUU fishing (MPCEIP, 2021). In October 2019, Ecuador received a yellow card from the European Union over shortcomings in the mechanisms that the country has put in place to ensure compliance with its international obligations as a flag, port and market state. The yellow card triggers a formal dialogue in which the Commission and the third country work together to solve all issues of concern. The actions taken by the Ecuadorian Government in this regard are summarized below: • Ecuador has secured the allocation of resources for the next 3 years through the "Comprehensive and Sustainable Strengthening of the Aquaculture and Fisheries Sector" investment project, which will invest a total of $37.66 million by December 2025. This strategic investment aims to enhance institutional capacities in fishery management, boost		

<table>
<tr><td>PI 3.2.3</td><td colspan="4">Monitoring, control, and surveillance (MCS) mechanisms ensure the management measures in the UoA are enforced and complied with</td></tr>
<tr><td></td><td colspan="4">productivity and competitiveness, and modernize the technological infrastructure for the Integrated Aquaculture and Fisheries System.
• Active work on the implementation of Memorandums of Understanding for the exchange of information on IUU fishing and have established mechanisms for ongoing monitoring and communication with the fishing authorities of other states to validate information provided by vessels.
• Implementation of the AMERP: Ecuador aligns its regulations with the AMERP, acting as a Flag State, Port State, and Coastal State. Ecuador participated in the 4th AMERP Meeting as the First Regional Vice President and will host the 5th Meeting in May 2025 in the city of Manta.
• Approval of the update of the National Control Plan.
• Strengthened operational capacity for the identification and application of monetary and complementary sanctions established in the new law through the hiring of officials to address old case backlogs.
• Updated and published information on the fishing fleet, harmonized controls with the EU Regulation 1005/2009.
• Interoperable processes for import authorization, and the SRP authorization prior to fish imports. Interagency collaboration and response capacity have been reinforced.
• Contracting of the Integrated Aquaculture and Fisheries System to transition from paper-based administration to an interoperable and auditable system. It is in its final phase before going live, significantly strengthening Ecuador’s capacity to comprehensively monitor the vast volumes of raw materials landed, imported, and processed in the country, with a record of movements throughout the entire value chain.
• Improvement in the physical and technological facilities of the Satellite Monitoring Center has been observed, along with the implementation of equipment for better monitoring, control, and surveillance.
• A new Fisheries Law passed in 2020.

The team concludes that Monitoring, control and surveillance mechanisms exist, and are implemented in the fishery and there is a reasonable expectation that they are effective meeting SG 60. The monitoring, control and surveillance system has been implemented in the fishery and Ecuador is now demonstrating an ability to enforce relevant management measures, strategies and/or rules meeting SG 80.</td></tr>
<tr><td rowspan="3">b</td><td colspan="4">Sanctions</td></tr>
<tr><td>Guide post</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>Yes</td><td>No</td><td>No</td></tr>
<tr><td>Rationale</td><td colspan="4">IATTC
IATTC established conservation management measures and related resolutions and enforcement is carried out by the national authorities. Blacklisting of non-member vessels (IUU lists) has become a widespread practice among all RFMOs including IATTC. There no trade sanctions against nation states, although theoretically these may be possible. Sanctions are only applied to fishing entities, such as IUU vessels and vessels that are detected as being non-compliant with resolutions).

Ecuador
In 2019 Ecuador received a yellow card from the European Union over shortcomings in the mechanisms that the country has put in place to ensure compliance with its international obligations as a flag, port and market state. The shortcomings noted by the European Union include:
• The legal framework in place is outdated and not in line with the international and regional rules applying to the conservation and management of fishing resources.</td></tr>
</table>

PI 3.2.3		Monitoring, control, and surveillance (MCS) mechanisms ensure the management measures in the UoA are enforced and complied with		
		• Law enforcement is hampered by this outdated legal framework, inefficient administrative procedures and a lenient approach towards infringements. As a result, the sanctioning system is neither depriving the offenders from the benefits accruing from IUU fishing, nor deterrent. • There are serious deficiencies in terms of control, notably over the activity of the tuna fishing and processing industries. • After finding that the country's regulations and procedures to combat IUU fishing do not comply with international and regional standards applicable to the conservation and management of fishery resources. In order to comply with the EU's observations, the Ecuadorian government has updated the legal framework (LODAP and its general regulations) establishing the application of sanctions with deterrent effect for illegal fishing activities, categorized from minor, serious to very serious, as well as determining a table of fines. After the notification of the yellow card, Ecuador established a two-year action plan with three priority areas: IUU fishing, coercive measures and the promotion of the application of international standards. With the enactment of the LODAP in 2020, the aim is to have an updated legal framework, which considers the application of sanctions and dissuasive infractions. Chapter VI of the LODAP details the sanctioning regime applicable to fishing activities. Likewise, the SRP through the Fisheries Control Directorate has established greater control and surveillance at ports and shipping zones. The following information was extracted from the 1st surveillance report of Tunacons fishery as a Condition (3.2) is open: '*At the first surveillance audit Ecuadorian management authorities (SRP) provided:* • *A description of the administrative sanction system* • *A Classification of infractions and sanctions that are in force with the new Fisheries Law and Regulations.* • *Details of infractions since the new fishing law came into force in 2020, generally and by the UoA.* • *Number of investigations resulting in a sanction* • *Amounts collected for the sanctions imposed, and* • *Non-monetary sanctions linked to infractions (cancellation of fishing permits, criminal prosecution for illegal activities, etc.)* *Evidence of both monetary and non-monetary sanctions being imposed in each year from 2020 to 2023 was provided as well as the number of reoffending vessels each season. We note that:* • *Although financial administrative penalties are being imposed, only a small fraction of that amount has been paid. This is explained as being due to fishing companies pursuing appeals in the courts that can be time consuming and delay the final resolution of cases.* • *Non-financial penalties including gear and catch confiscation, company suspensions and vessels bans are commonly imposed on the tuna fleet -some 366 through 2023 (noting 2023 figures are still being complied).* • *The UoC received some, yet relatively sanctions,* • *The number of vessels being sanctioned a second time appears to be decreasing for 2020-to 2023 suggesting the scheme may be providing a deterrence.´* The conclusion of the team was that the progress is 'on target'. It is expected to close the condition in the fourth year (2025). Therefore, the score for this SG is only 60.		
c	**Compliance (information)**			
	Guide post	Fishers are **generally thought** to comply with the management system for the fishery under assessment, including, when required, providing information of	**Some evidence exists** to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to	There is a **high degree of confidence** that fishers comply with the management system under assessment, including, providing information of importance to

PI 3.2.3		Monitoring, control, and surveillance (MCS) mechanisms ensure the management measures in the UoA are enforced and complied with		
		importance to the effective management of the fishery.	the effective management of the fishery.	the effective management of the fishery.
	Met?	**Yes**	**Yes**	**No**
Rationale		**IATTC** The IATTC has a permanent working group on compliance that reviews and monitors compliance with IATTC management measures (IATTC-COR 2014). As well as undertaking analysis of information on compliance and reporting the findings to the IATTC, the working group also recommends measures to promote compatibility among the national fisheries management measures, addressing matters related to compliance with fisheries management measures. **Ecuador** The following justification was extracted from the PCR of the Tunacons fishery '*Ecuador Available information from the NOAA's 2021 finding of a positive certification with respect to IUU and that Ecuador has taken appropriate corrective action to address the IUU fishing activities for which it was identified in 2019 (inadequate compliance with IATTC Resolution C-11-07) provides evidence to demonstrate fishers comply with the management system including, when required, providing information of importance to the effective management of the fishery. However, the confidential nature of much of the information in relation to this Scoring Issue and concerns documented by the EU in its awarding of the yellow card mean that there is not a high degree of confidence that fishers comply with the management system under assessment, preventing SG 100 being met. SG 60 and SG 80 requirements are met.*'		
d	**Compliance (outcome)**			
	Guide post		There is no evidence of systematic non-compliance	
	Met?	**Yes / No**	**No**	**Yes / No**
Rationale		**IATTC** and **Ecuador**, Non-compliance with conservation measures is likely opportunistic or possibly down to ignorance of the resolutions and/or the lack of sanctions. Non-compliance does not appear to be systematic and does not threaten the sustainability of the fishery. However, this SG should be assessed in detailed during a full assessment. SG80 is not met.		
Draft scoring range		**60-79**		
Information gap indicator		**More information sought**		

PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4		There is a system for monitoring and evaluating the performance of the fishery-specific management system against its objectives. There is effective and timely review of the fishery-specific management system		
Scoring issue		**SG 60**	**SG 80**	**SG 100**
a	**Evaluation coverage**			
	Guide post	There are mechanisms in place to evaluate **some** parts of the fishery-specific management system.	There are mechanisms in place to evaluate **key** parts of the fishery-specific management system.	There are mechanisms in place to evaluate **all** parts of the fishery-specific management system.
	Met?	**Yes**	**Yes**	**No**
Rationale		The IATTC has mechanisms in place to evaluate the management system as demonstrated by the various committees and working groups of IATTC that meet regularly and report their findings to the Commission. As well as the annual Commission meetings, regular meetings include those		

PI 3.2.4		There is a system for monitoring and evaluating the performance of the fishery-specific management system against its objectives. There is effective and timely review of the fishery-specific management system		
		for the Scientific Advisory Committee, the Committee for the Review of Implementation Measures and the International Review Panel. **SG60 and SG80** requirements **are met** as there are mechanisms in place to evaluate key parts of the fishery-specific management system. SG100 is not met as it is not clear that these arrangements cover all parts of the fishery-specific management system.		
b	**Internal and/or external review**			
	Guide post	The fishery-specific management system is subject to **occasional internal** review.	The fishery-specific management system is subject to **regular internal** and **occasional external review**.	The fishery-specific management system is subject to **regular internal and external** review.
	Met?	**Yes**	**Yes**	**No**
Rationale		The Commission has overall responsibility for developing and implementing a fishery specific management system, Members are bound by the arrangements in the management system and required to implement these in domestic legislation and policy. The IATTC is subject to regular internal review. SG60 is met. The IATTC has carried out an external performance review in 2016 (Moss-Adams 2016). This implies that the RFMO **meets SG80** with respect to “occasional external” review. However, the management system is not subject to regular internal and external review, thus SG 100 is not met.		
Draft scoring range		**≥80**		
Information gap indicator		**Information sufficient to score PI**		

8. Appendices

8.1. Evaluation processes and techniques

8.1.1. Site visits

The CAB may include in the report:

- *A description of any field activities that were conducted during the pre-assessment.*
- *A list of meetings held.*
- *Details of any other engagement with stakeholders.*

Reference(s): FCP v2.3 Section 7.14

8.1.2. Recommendations for stakeholder participation in full assessment

- **Government and Regulatory Bodies**
  - **Ecuador:** Subsecretaría de Recursos Pesqueros (SRP) and Instituto Nacional de Pesca (INP) and other organism indicated in **Section 7.7.1.1**.
  - **Costa Rica:** Instituto Costarricense de Pesca y Acuicultura (INCOPESCA).
  - **Perú**: Ministerio de la Producción-Perú (PRODUCE)
  - **Panama:** Autoridad de los Recursos Acuáticos de Panamá (ARAP).
  - **Colombia:** Autoridad Nacional de Acuicultura y Pesca (AUNAP).
  - **High seas:** Inter-American Tropical Tuna Commission (IATTC).

- **Fishing Industry**
  - Tuna purse seine vessel owners and operators.
  - Ecuadorian industrial fishing associations, if applied.
  - Companies involved in tuna processing and exports, if applied.

- **Environmental Organizations**
  - World Wildlife Fund (WWF) – EPO tuna program.
  - Oceanic Society or similar organizations active in marine conservation in the region.
  - ISSF.

- **Scientific and Research Bodies**
  - IATTC scientific advisors for tuna stock assessment and ecosystem data.
  - Universidad de Guayaquil, Universidad del Valle (Colombia), or Universidad de Panamá, with marine biology or fisheries research programs.

- **Market Stakeholders**
  - Retailers and buyers of certified tuna products that can be an active stakeholder for traceability.

- **Observer Programs and Monitoring Groups**
  - IATTC Regional Observer Program representatives.
  - Electronic Monitoring (EM) service providers (if applicable).

- **CABs**
  - MSC-overlaping Fisheries certified.

8.2. Harmonised fishery assessments

In accordance with FCP PB1.3.1, CABs assessing overlapping fisheries shall ensure consistency of outcomes so as not to undermine the integrity of MSC fishery assessment. Overlapping fisheries are those which target the same P1 stock, operate in the same geographical area, impact the same P2 scoring elements or are subject to management by the same jurisdictions. Subsequently, these fisheries will require harmonization of some, or all of the PI/SIs of the MSC P1, P2, and P3 among the overlapping MSC UoAs. **Table 8.2.1** shows how to determine the PIs that are subject to harmonisation.

Table 8.2.1: MSC directions for harmonisation between overlapping MSC fisheries

PIs /SIs	Harmonise?	Comments
All P1 PIs	Yes	P1 always considers the impacts of all fisheries on a stock, so any fisheries which have the same P1 species (stocks) shall be harmonised.
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)
PI 2.2.1a	Partially	For stocks that are 'main' in both UoAs, harmonise status relative to BBL (at SG60, 80 and 100), and if below BBL, harmonise cumulative impacts at SG80 (not at SG60).
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).
PI 2.4.1b	Partially	Harmonise recognition of VMEs where both UoAs operate in the same 'managed area/s' (as in SA3.3.5).
PI 2.4.2a, c	Partially	Harmonise scoring at SG100, since all fishery impacts are considered (not at SG60 or 80).
All P2 PIs	Yes, if ->	Two UoAs are identical in scope, even if the UoCs are different (e.g., separate clients).
PIs 3.1.1-3	Yes, if ->	Both UoAs are part of the same larger fishery or fleet or have stocks in either P1 or P2 which are at least partially managed by the same jurisdiction/s (nation states RFMOs or others) or under the same agreements. Harmonisation may sometimes be possible for those management arrangements that apply to both UoAs (noting the limitations accepted in the GPB3).
PIs 3.2.1-4	Yes, if ->	Both UoAs have stocks within either P1 or P2 which are at least partially managed by the same jurisdiction/s (nation states, RFMOs or others) or under the same agreements. Harmonisation is needed for those management arrangements that apply to both UoAs, e.g., at the RFMO level but not the national level in the case of two separate national fleets both fishing the same regional stock.

All certified fisheries operating in the Eastern Pacific Ocean FAO 77 & 87 are listed in **Table 8.2.2**

Table 8.2.2: Overlapping Units of Assessment in the Eastern Pacific Ocean, status and PIs subject to harmonization. Source: MSC website and Harmonization database.

Fishery name	Unit of Assessment	Certification status	Certification date	Performance Indicators to harmonise
F1: AGAC four oceans Integral Purse Seine Tropical Tuna Fishery	3 tuna stocks: Yellowfin Eastern Pacific Ocean stock Skipjack tuna Eastern Atlantic Bigeye tuna Eastern Pacific Ocean stock	Certified	08/12/2021	P1 YFT, BET & SKJ PIs P2 the only main species are the targeted tuna. P3 All PIs that apply to SKJ, BET & YFT wholly IATTC: 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.3 & 3.2.4.
F2: Atún Sostenible EPO Panamá Tuna Fishery	2 tuna stocks: Skipjack Eastern Pacific Ocean stock Yellowfin Eastern Pacific Ocean stock	Certified	28/05/2024	P1 YFT & SKJ. PIs P2. the only main species are the targeted tuna. P3 all PIs that apply to SKJ & YFT either wholly or partially at regional/Ecuador governance level: 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.3 & 3.2.4.
F3: Dae Hae Pacific Yellowfin, Bigeye, and Albacore Longline	2 tuna stocks: Bigeye Eastern Pacific Ocean stock (UoA5) Yellowfin Eastern Pacific Ocean stock (UoA6)	Certified	09/09/2024	P1 YFT, BET & SKJ PIs P2 the only main species are the targeted tuna. P3 All PIs that apply to SKJ, BET & YFT wholly IATTC: 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.3 & 3.2.4.
F4: Eastern Pacific Ecuador Purse Seine Tropical Tuna Fishery (FSC and FAD set fishery)	2 tuna stocks: Skipjack Eastern Pacific Ocean stock Yellowfin tuna Eastern Pacific	Certified SKJ & YFT	21/12/2022	P1 YFT & SKJ. PIs P2. the only main species are the targeted tuna. P3 all PIs that apply to SKJ & YFT either wholly or partially at regional/Ecuador governance level: 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.3 & 3.2.4.
F5: Eastern Pacific Ocean tropical tuna - purse seine (TUNACONS) fishery	3 tuna stocks: Yellowfin Eastern Pacific Ocean stock (UoA1,2,8,9) Skipjack Eastern Pacific Ocean stock Bigeye tuna Eastern Pacific Ocean stock (Scope extension)	Certified SKJ & YFT BET under assessment	07/07/2022	P1 YFT & SKJ. PIs P2. the only main species are the targeted tuna. P3 all PIs that apply to SKJ & YFT either wholly or partially at regional/Ecuador governance level: 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.3 & 3.2.4.

F6: Fortuna Pacific longline albacore, bigeye and yellowfin tuna fishery	2 tuna stocks: Bigeye Eastern Pacific Ocean stock (UoA4) Yellowfin Eastern Pacific Ocean stock (UoA6)	Certified	26/06/2024	P1 YFT & BET PIs P2 the only main species are the targeted tuna. P3 All PIs that apply to YFT & BET wholly IATTC: 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.3 & 3.2.4.
F7: French Polynesia albacore, yellowfin and swordfish longline fishery	1 tuna stock: Yellowfin Eastern Pacific Ocean stock	Recertified	25/09/2024	P1 YFT PIs P2 the only main species are the targeted tuna. P3 All PIs that apply to YFT wholly IATTC: 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.3 & 3.2.4.
F8: Hawaii longline swordfish, bigeye and yellowfin tuna fishery	1 tuna stock: Yellowfin Eastern Pacific Ocean stock (UoA4, UoA9)	Certified	05/09/2022	P1 YFT PIs P2 the only main species are the targeted tuna. P3 All PIs that apply to YFT wholly IATTC: 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.3 & 3.2.4.
F9: US Pacific Tuna Group Purse Seine FSC and FAD Set Fishery	3 tuna stock: Yellowfin Eastern Pacific Ocean stock Skipjack Eastern Pacific Ocean stock Bigeye Eastern Pacific Ocean stock (Scope extension)	Certified BET under assessment	08/06/2022 (YFT) 08/12/2023 (SKJ)	P1 YFT & SKJ PIs P2 the only main species are the targeted tuna. P3 All PIs that apply to YFT & SKJ wholly IATTC: 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.3 & 3.2.4.
F10: Sajo WCPO and EPO bigeye, yellowfin, and albacore tuna longline	2 tuna stock: Bigeye Eastern Pacific Ocean stock (UoA5) Yellowfin Eastern Pacific Ocean stock (UoA6)	Certified	19/11/2024	P1 BET & YFT PIs P2 the only main species are the targeted tuna. P3 All PIs that apply to BET & YFT wholly IATTC: 3.1.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.3 & 3.2.4.

Table 8.2.3: Overlapping Units of Assessment

Supporting information	
Kiwa has no participated in any harmonization meeting of EPO species. However, **Table 8.2.4** was completed with the most updated information.	
Has there been an Annual Harmonisation meeting of which the results will be adopted?	*Yes / No*
Date of annual harmonisation meeting	*DD / MM / YY*

If applicable, describe the meeting outcome
e.g. Agreement found among teams or lowest score adopted.

Table 8.2.4: Scoring differences of the overlapping fisheries for the 3 target species.

Performance Indicators (PIs)	F1 (2SV audit)	F2 (PCR)	F4 (1st SV)	F5 (1st SV)	F9 (2nd SV)
PI 1.1.1 SKJ	100	100	100	90	100
PI 1.1.2 SKJ		N/A	N/A	N/A	N/A
PI 1.2.1 SKJ	85	85	85	80	85
PI 1.2.2 SKJ	75	75	75	75	75
PI 1.2.3 SKJ	80	80	80	80	80
PI 1.2.4 SKJ	90	90	90	90	90
PI 3.1.1 SKJ	80	80	85	95	80
PI 3.1.2 SKJ	85	80	85	95	95
PI 3.1.3 SKJ	80	100	90	100	90
PI 3.2.1 SKJ	80	80	75	100	95
PI 3.2.2 SKJ	75	85	75	80	85
PI 3.2.3 SKJ	75	70	60	85	80
PI 3.2.4 SKJ	90	80	80	90	80

Performance Indicators (PIs)	F1 (2nd SV)	F2 (PCR)	F3	F4 (1st SV)	F5 (1st SV)	F6 - Fortuna (PCR)	F7 (PCR)	F8 (1st SV)	F9 (2nd SV)	F10 (PCR)
PI 1.1.1 YFT	80	80	80	80	80	80	80	80	80	80
PI 1.1.2 YFT		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PI 1.2.1 YFT	80	80	80	80	80	80	80	80	80	80
PI 1.2.2 YFT	80	80	80	80	80	80	80	80	80	80
PI 1.2.3 YFT	80	80	80	80	80	80	80	80	80	80
PI 1.2.4 YFT	95	100	90	95	95	100	90	95	95	90
PI 3.1.1 YFT	80	80	85	80	95	85	85	85	80	85
PI 3.1.2 YFT	85	80	85	85	95	85	85	85	95	80
PI 3.1.3 YFT	80	100	85	90	100	90	100	80	90	90
PI 3.2.1 YFT	80	80	85	90	100	75	90	80	95	80
PI 3.2.2 YFT	75	85	80	75	80	75	95	75	85	80
PI 3.2.3 YFT	75	70	70	70	85	60	80	80	80	65
PI 3.2.4 YFT	90	80	80	85	90	80	90	80	80	80

**Other stock assessment ***Expected to be updated at the next surveillance audit.

Performance Indicators (PIs)	F1 (2nd SV)	TUNACONS	F3 - Dae Hae Pacific	F6 - Fortuna (PCR)	F9 - US Pacific Tuna	F10- Sajo
PI 1.1.1 BET	80	≥80	80	80	≥80	80
PI 1.1.2 BET	N/A	N/A	N/A	N/A	N/A	N/A
PI 1.2.1 BET	70	60-79	70	70	60-79	70
PI 1.2.2 BET	80	≥80	80	80	≥80	80
PI 1.2.3 BET	80	≥80	80	80	≥80	80
PI 1.2.4 BET	90	≥80	90	90	≥80	90
PI 3.1.1 BET	80	≥80	85	85	80	85
PI 3.1.2 BET	85	≥80	85	85	95	80
PI 3.1.3 BET	80	≥80	85	90	90	90
PI 3.2.1 BET	80	≥80	85	75	95	80
PI 3.2.2 BET	75	≥80	80	75	85	80
PI 3.2.3 BET	75	≥80	70	60	80	65
PI 3.2.4 BET	90	≥80	80	80	80	80

Table 8.2.5: Rationale for scoring differences

If exceptional circumstances apply, outline the situation and whether there is agreement between or among teams on this determination (FCP v2.3 Annex PB 1.3.2.1).
N/A
If applicable, explain and justify any difference in scoring and rationale for the relevant Performance Indicators (FCP v2.3 Annex PB 1.3.2.2).
N/A

Table 8.2.6 Principle 2 elements to be assessed the cumulative impacts.

Outcome Performance Indicator	Element	Cumulative impact?	Rationale
2.1.1 Primary species(main)	Skipjack tuna Yellowfin tuna	No	Stock is not highly likely to be below the PRI.
2.2.1 Secondary species(main)	No main secondary species are defined in the fishery	No	No main secondary species present

2.3.1 ETP outcome	Dolphin species: Offshore spotted dolphin Spinner dolphin 1 Common dolphin 2	No	Tuna fishery sets on dolphins in the Eastern Tropical Pacific but limits are set up by countries so it could Tunacons in a future full assessment,
2.4.2 VME management	VMEs	No	No VMEs present

Initially, the results observed in other fisheries will be considered regarding the target species when they are primary species. For non-target species, once a clearer composition is available with data from the entire fleet, overlapping fisheries will be reviewed to identify which primary and secondary species should be harmonized, depending on the final designation in this fishery. Special attention will be given to potential scores assigned to ETP species and habitats due to the cumulative impact of FAD usage, if applicable.

8.3. Assessment Team – biographies/summaries of CVs (optional)

The CAB may include in an appendix to the report biographies and/or summaries of CVs of the assessment team.

8.4. References (Bibliography)

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The CAB should delete the table below:

Table 2: Template version control

Version	Date of publication	Description of amendment
1.0	15 August 2011	Date of first release
1.1	31 October 2013	Updated in line with changes to CR v1.3
2.0	08 October 2014	Confirmed background sections (Section 3) as optional (use of 'may' statements) Modified Table 6.3 to create a simplified scoring sheet to be completed in place of full evaluation tables Made amendments to PIs based on Fishery Standard Review changes (e.g. removed original PIs 1.1.2, 3.1.4 and 3.2.4).
2.1	9 October 2017	Inclusion of optional full evaluation tables
3.0	17 December 2018	Release alongside Fisheries Certification Process v2.1
3.1	29 March 2019	Minor document changes for usability
3.2	25 March 2020	Release alongside Fisheries Certification Process v2.2
3.3	26 October 2022	Release alongside Fisheries Certification Process v2.3
3.4	01 May 2023	Added optional vessels list section 5.2.

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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