

Principle 1 & 2 Performance Indicators Score Updates in the Atlantic Ocean

**Confidential Report
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Prepared by

by Key Traceability Ltd.
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Scoring overview

<60	60 - 79	80+	Not scored
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Table 1. Overview of the scoring updates

Component	PI No.	Performance Indicator	Atlantic
Stock status	1.1.1	Stock status for BET	
Primary Species	2.1.1	Outcome	
	2.1.2	Management	
	2.1.3	Information	
Secondary Species	2.2.1	Outcome	
	2.2.2	Management	
	2.2.3	Information	
ETP Species	2.3.1	Outcome	
	2.3.2	Management	
	2.3.3	Information	
Habitats	2.4.1	Outcome	
	2.4.2	Management	
	2.4.3	Information	
Ecosystem	2.5.1	Outcome	
	2.5.2	Management	
	2.5.3	Information	

PI 1.1.1 – Stock status

PI 1.1.1		The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing		
Scoring Issue		SG 60	SG 80	SG 100
a	Stock status relative to recruitment impairment			
	Guide post	It is likely that the stock is above the point where recruitment would be impaired (PRI).	It is highly likely that the stock is above the PRI.	There is a high degree of certainty that the stock is above the PRI.
	Met?	BET: Yes	BET: Yes	BET: No
Rationale BET The Report of the 2025 ICCAT Atlantic Bigeye tuna Stock Assessment Meeting mentions the limit reference point (LRP) for Atlantic bigeye tuna at 40% B_{MSY} . 75% of B_{MSY} has been identified as the PRI as no B_0 was estimated in the 2025 stock report (SCRS/2025/011). The stock is estimated at 123% of B_{MSY} and has shown a sustained increase in spawning biomass in recent years. Given that the PRI for tuna assessments is typically defined as a fraction of B_{MSY} (e.g., 0.4 B_{MSY}), the estimated stock biomass remains substantially above the PRI. The assessment therefore provides strong evidence that the stock is highly likely to be above the PRI and is fluctuating around a level consistent with MSY . SG80 is met. However, the assessment does not provide evidence demonstrating a high degree of certainty that biomass is above the PRI proxy (0.75 B_{MSY}), and therefore SG100 is not met.				

b	Stock status in relation to achievement of Maximum Sustainable Yield (MSY)			
	Guide post	The stock is at or fluctuating around a level consistent with MSY .	There is a high degree of certainty that the stock has been fluctuating around a level consistent with MSY or has been above this level over recent years.	
	Met?	BET: Yes	BET: No	

Rationale

BET

The 2025 Atlantic bigeye tuna stock assessment indicate that stock biomass exhibited a long-term decline from the onset of the fishery, accelerating between 1970 and 2000, before stabilising over the subsequent two decades around SSBMSY. However, stock biomass in the recent four years (2020-2023) showed a rapid increasing trend. Associated to this continuous historical decrease of biomass, fishing mortality rose from the start of the fishery until 1999, declined after and particularly in the last four years, and has been at or below F_{MSY} since 2005 ICCAT SCRS has concluded that the stock seems to be recovering since 2019 (Anon, 2025). In summary, the stock is currently assessed to not be overfished and not in overfishing (green quadrant; 73.8% probability). Therefore, the stock is considered to be fluctuating around a level consistent with MSY and **SG80 is met**.

However, as the stock recovery is recent, there isn't a high degree of certainty and SG100 is not met.

Overall Performance Indicator (PI) Rationale

Draft scoring range	BET $\geq$ 80
Information gap indicator	Information sufficient to score PI
Data-deficient? (Risk-Based Framework needed)	Yes

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?	Pacific chub mackerel: No Atlantic sailfish: Yes	Pacific chub mackerel: No Atlantic sailfish: Yes	Pacific chub mackerel: No Atlantic sailfish: No

Rationale

The fishery collated logbook data from 2023 to 2025.

Table 2. Catch composition in weight (kgs) in this UoA based on logbook (2023 – 2025).

Species	Item	Catch weight (kgs)	Composition (%)	MSC Category
Albacore tuna	Catch	415,109	9.23%	Target
Bigeye tuna	Catch	315,222	7.01%	Target
Yellowfin tuna	Catch	1,911,502	42.51%	Target
Pacific chub mackerel	Bait	814,140	18.11%	Main primary
Sailfish	Catch	232,039	5.16%	Main primary
Porbeagle shark	Catch	2,693	0.06%	Minor primary
Blue marlin	Catch	39,821	0.89%	Minor primary
Blue shark	Catch	54,343	1.21%	Minor primary
Swordfish	Catch	17,660	0.39%	Minor primary
Pacific sardine	Bait	8,560	0.19%	Minor primary
Mahi mahi	Catch	27,407	0.61%	Minor secondary
Oilfish	Catch	71,028	1.58%	Minor secondary
Black marlin	Catch	5,962	0.13%	Minor secondary
Striped marlin	Catch	1,575	0.04%	Minor secondary
Wahoo	Catch	83,184	1.85%	Minor secondary
Muroaji	Bait	9,380	0.21%	Minor secondary

Hammerhead shark	Catch	4,726	0.11%	ETP
Mako sharks	Catch	8,205	0.18%	ETP
Oceanic whitetip shark	Catch	2,357	0.05%	ETP
Silky shark	Catch	6,466	0.14%	ETP
Thresher shark	Catch	4,120	0.09%	ETP
Milkfish	Bait	460,550	10.24%	Farmed
Grand Total		4,496,109	100.00%	

Main primary species includes:

- Pacific chub mackerel (bait)
- Atlantic sailfish

Pacific Chub mackerel (bait)

The Pacific stock and Tsushima Current stocks of chub mackerel are both below a level of biomass commensurate with MSY, but above 60%SBMSY. Probabilities associated with stock levels are uncertain and uncertainties in catch estimates contributing to the model outputs for the Pacific stock are noted (e.g. non-Japanese catch) (https://abchan.fra.go.jp/wpt/wp-content/uploads/2024/03/details_2023_05.pdf [Accessed 09 June 2026], https://abchan.fra.go.jp/wpt/wp-content/uploads/2024/01/simple_2023_06.pdf [Accessed 09 June 2026]). It cannot be concluded that these main primary species stocks are highly likely to be above the PRI. **SG60 is not met.**

Atlantic sailfish

The 2016 assessment for the eastern and western stock were conducted using a Bayesian surplus production model, a production and the Stock Reduction Analysis models (ICCAT, 2019f).

The latest ICCAT assessment for Atlantic sailfish was conducted in 2023 using data up to 2021. For the East Atlantic stock, the final JABBA model selected by the Group estimated B2021/BMSY = 1.83 (95% CI: 1.14–2.88) and F2021/FMSY = 0.36 (95% CI: 0.21–0.59). The Kobe plot indicated a 99% probability that the stock was in the green quadrant. The East Atlantic stock is therefore considered not overfished and not subject to overfishing. Even that the lower confidence interval for biomass remains above the PRI proxy of 0.75 BMSY, the East Atlantic stock can be considered highly likely to be above the PRI.

For the West Atlantic stock, ICCAT reviewed both JABBA and Stock Synthesis results. The selected JABBA model, S5, estimated B2021/BMSY = 0.955 (95% CI: 0.588–1.491) and F2021/FMSY = 0.585 (95% CI: 0.364–0.952). Stock Synthesis Model 6 produced a similar biomass estimate, with B2021/BMSY = 0.95 (95% CI: 0.63–1.42), and estimated F2021/FMSY = 0.65 (95% CI: 0.40–1.04). These results indicate that the West Atlantic stock is not undergoing overfishing, but biomass is close to, or slightly below, BMSY depending on the model interpretation. Although the West Atlantic stock is not subject to overfishing, uncertainty remains around biomass status. The confidence intervals from both final model formulations include values below the PRI proxy of 0.75 BMSY.

Therefore, while the stock is likely to be above the PRI, the assessment does not provide a high degree of certainty that this is the case. On this basis, the East Atlantic stock meets the requirement for being highly likely to be above the PRI, whereas the West Atlantic stock should be treated more cautiously and cannot be concluded to be above the PRI with a high degree of certainty. **SG 80 is met.**

b	Minor 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?			Minor species: Yes

Rationale

According to the fishery's logbook from 2023 to 2025, the minor primary species includes:

- Porbeagle shark
- Blue marlin
- Blue shark (North and South Atlantic)
- Swordfish (North and South Atlantic)
- Pacific sardine (Pacific & Tsushima stocks)
- South Atlantic shortfin mako

North Pacific swordfish

The status of this stock was last assessed in 2023 (ISC Billfish Working Group 2023). Fishing mortality was estimated to be 0.09 in 2021 and averaged around the same value 2019-2021. This level of fishing mortality is commensurate with around 51% of FMSY with relative fishing mortality estimated at $F/FMSY = 0.49$ in 2021. Fishing mortality has been below FMSY since the beginning of the assessment period. SSB2021 is 220% above SSBMSY. It is most likely that the stock is not overfished and overfishing is not occurring (both >99% probability) relative to MSY-based reference points. There is a high degree of certainty that this minor primary species is above the PRI. **SG100 is met.**

South Pacific swordfish

The status of this minor primary species was assessed in 2021 (Ducharme-Barth et al. 2021). The stock is estimated to have spawning potential above a level commensurate with MSY (median SBlatest/SBMSY 2.95; 10 - 90th percentiles: 0.99 – 6.78) and SBrecent/SBMSY has a median value of 3.61 (10 - 90th percentiles: 1.23–7.39). There was a 10% risk that SBlatest/SBMSY<1 when considering model and estimation uncertainty. Using only model-based uncertainty, that risk became 4%. Fishing mortality is estimated to have sharply increased in the early-2000s and appears to have stabilized at high levels in the last decade. The median of relative recent fishing mortality Frecent/FMSY is 0.47 (10 - 90th percentiles: 0.25 – 1.29). There was a 20% risk that $F/FMSY > 1$ when considering structural and estimation uncertainty. Stock status is highly likely to be above PRI and **SG100 is met.**

Porbeagle shark

Two modelling approaches were used to assess the status of porbeagle shark stocks in the Atlantic and two additional methods were also explored in 2020. The SAFE (Sustainability Assessment for Fishing Effects) was used to evaluate whether the combined North and combined South Atlantic stocks were experiencing overfishing. The ICM (Incidental Catch Model) was used to evaluate whether the NW Atlantic stock was currently overfished and to determine the stock's capacity for future removals. Results of the SAFE approach indicated that neither the North Atlantic nor the South Atlantic stocks are undergoing overfishing (ICCAT, 2022). For the NW Atlantic stock, the ICM model estimated $B2018/BMSY = 0.57$ (353,000 animals), giving a 98% probability of the stock being overfished (ICCAT, 2022). Due to a lack of reporting, the magnitude of dead discards remains uncertain and post-release mortalities are not incorporated in the ICM assessment, so there remains considerable uncertainty in the assessment of status (ICCAT, 2022). In 2022, a new stock assessment was carried out for the NE Atlantic stock

which advised that despite increases in the exploited biomass since 2010s due to fishing restrictions, $B_{2021}/B_{MSY} = 0.46$ (0.15-1.43, 95% CIs) and $F_{2021}/F_{MSY} = 0.01$ (0.00-0.07, 95% CIs). Therefore, the stock remains overfished, but overfishing is not occurring. Given the results of the models for the northern hemisphere stocks, and some uncertainty for the southern hemisphere stocks, neither are considered highly likely to be above the PRI. UoA fleet scaled-up catches of this species amount to an estimated 0.89 t per annum, which is significantly lower (~0.06%) than 30% (the threshold below which fisheries would not ordinarily hinder recovery of the species under GSA3.4.6) of the total global catch in northern hemisphere. This contribution to the fishing mortality of porbeagle shark means **SG100 is met**.

Atlantic blue marlin

The 2018 stock assessment used both a Bayesian surplus production and age-structured model, which estimated $SSB_{2016}/SSB_{MSY} = 0.69$ (0.52-0.91, 80% CIs) and $F_{2016}/F_{MSY} = 1.03$ (0.74-1.50, 80% CIs) (ICCAT, 2019e). Therefore, the Atlantic blue marlin stock is considered overfished, with overfishing occurring. The probability of being in the red quadrant of the Kobe plot was estimated to be 54%. The probability of the being in the yellow quadrants of the Kobe plot was estimated to be 42% and that of being in the green quadrant only 4%. UoA fleet scaled-up catches of this species amount to an estimated 39.8 t per annum, which is lower (~0.89%) than 30% (the threshold below which fisheries would not ordinarily hinder recovery of the species under GSA3.4.6) of the total global catch (~1,391 t in 2020). This contribution to the fishing mortality of Atlantic blue marlin means **SG100 is met**.

North Atlantic blue shark

The most recent assessment was conducted in 2023. The 2023 assessment used a Bayesian surplus production model (i.e. JABBA) with process error and an integrated age structured model (i.e. Stock Synthesis). It was believed that both models showed reasonable model fits and diagnostics, therefore there was agreement to combine the JABBA and SS3 models when assessing stock status and producing projections. Based on the combined results from both models the stock biomass was above BMSY ($B_{2021}/B_{MSY} = 1.00$ – 95% CI of 0.75-1.31) and F_{2021} was lower than F_{MSY} ($F_{2021}/F_{MSY} = 0.70$ – 95% CI of 0.50 to 0.93). The combined results indicate that the stock is at the MSY level and is not experiencing overfishing. It is therefore highly likely that the stock is above the PRI (assumed to be 0.5BMSY based on GSA2.2.3.1). **SG100 is met**.

South Atlantic blue shark

The most recent assessment was conducted in 2023. The 2023 assessment used a Bayesian surplus production model (i.e. JABBA) with process error and an integrated age structured model (i.e. Stock Synthesis). It was believed that both models showed reasonable model fits and diagnostics, therefore there was agreement to combine the JABBA and SS3 models when assessing stock status and producing projections. Based on the combined results from both models the stock biomass was above BMSY ($B_{2021}/B_{MSY} = 1.406$ – 95% CI of 0.933-1.874) and F_{2021} was lower than F_{MSY} ($F_{2021}/F_{MSY} = 0.824$ – 95% CI of 0.39 to 1.468). The combined results indicate that the stock is at the MSY level and is not experiencing overfishing. It is therefore highly likely that the stock is above the PRI (assumed to be 0.5BMSY based on GSA2.2.3.1). **SG100 is met**.

South Atlantic shortfin mako

A stock assessment was undertaken for South Atlantic shortfin mako shark in 2017 (ICCAT, 2019h). Results of four stock assessment model runs were selected to provide stock status and management advice. The assessment estimates of depletion were highly uncertain due to conflict between catch and CPUE data (B_{2015}/B_{MSY} deterministic estimates ranged from 0.65 to 1.75), with a combined 28% probability from all the models of being in an overfished state and experiencing overfishing.

The fishery cannot provide an accurate number of weight for the South and North catch as the logbook data does not have geolocations of each mako shark catch. However, the total catch of MAK (0.18%) is significantly lower

than 30% (the threshold below which fisheries would not ordinarily hinder recovery of the species under GSA3.4.6) of the total estimated catch of 2,249 t in 2021. This contribution to the fishing mortality of South Atlantic shortfin mako means **SG100 is met**.

Pacific sardine (Pacific stock)

The Pacific stock of the Japanese sardine has been assessed as above MSY since 2018. Since 2012, fishing mortality has been below FMSY. Fishing mortality has increased again in recent years. However, based on current projections, the stock will remain above MSY until 2030 with 100% confidence (https://abchan.fra.go.jp/wpt/wp-content/uploads/2024/03/details_2023_01.pdf [Accessed 08 June 2026]). SG60, SG80 and **SG100 are met**.

Pacific sardine (Tsushima stock)

The Tsushima Current stock of the Japanese sardine is below a level commensurate with MSY and 60%SBMSY. Considering a default PRI of 20%B0=0.5BMSY (GSA2.2.3.1), there is not sufficient confidence to conclude that this minor primary species is highly likely to be above the PRI. However, stock status has been improving for the years 2020 – 2022, and was predicted to continue to increase under current management (https://abchan.fra.go.jp/wpt/wp-content/uploads/2024/03/details_2023_02.pdf [Accessed 08 June 2026]). This is sufficient to **meet the requirements of SG100**.

Overall Performance Indicator (PI) Rationale

Draft scoring range	Pacific chub mackerel < 60 Atlantic sailfish ≥ 80 Minor species ≥ 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?	Pacific chub mackerel: Yes Atlantic sailfish: Yes Minor species: Yes	Pacific chub mackerel: Yes Atlantic sailfish: Yes Minor species: Yes	Pacific chub mackerel: Yes Atlantic sailfish: No Minor species: No
Rationale Main primary species are as follows: - Pacific chub mackerel - Atlantic sailfish Except for the bait species, all main primary species are subject to the following ICCAT Recommendations (to the extent these apply to longline fisheries): - Recommendation 03-13 ICCAT (2003) concerning the recording of catch by fishing vessels in the ICCAT Convention Area - Recommendation 15-07 (ICCAT 2015b) on the development of harvest control rules and of management strategy evaluation <u>Pacific chub mackerel</u> At the stock level, there is a strategy in place for managing the Pacific stock of chub mackerel. This includes management implemented by Japan and the North Pacific Fisheries Commission. The North Pacific Fisheries Commission has set limits on chub mackerel catches, and some capacity limits as set out in CMM 2024-07. This CMM came into force 1 June 2024. Monthly reporting of catches is required, until 60% of the total catch limit is reached. Then weekly reporting is required. At 95% of the catch limit, Members must cease fishing within 2 days of notification by the Commission’s Executive Secretary. Management is designed for this stock specifically and there are mechanisms for the modification fishing practices in the light of the identification of unacceptable impacts (in this case, cessation when the catch limit is met, and for revision of the CMM). For both the Pacific stock and the Tsushima Current stock of chub mackerel, FAJ sets the total allowable catch within the ABC that applies within Japanese waters. (Management regulations set the ABC, which is based on data for year t-2, using the stock assessment results from year t-1 (Hakala et al. 2023)). After excluding a ‘reserve’, the TAC is distributed among entitled recipient fishery organisations. Among these organisations, allocations to the large- and medium-scale purse seine fisheries for both bait species are divided and assigned to individual vessels (under individual quota management). Catch reporting is required for stocks under TAC and is used to monitor catch volumes taken. If allocations appear likely to be exceeded, the Minister of Agriculture, Forestry and Fisheries				

or the prefectural governor may issue an order to cease fishing. If exceedances occur, overcatch is deducted from the following year's allocation. For fishing vessels under individual quota management, catch beyond the allocated IQ is deducted from the following year's allocation. Depending on the severity of the overcatch, additional penalties may be imposed. Operationally, the scale of the UoAs also limit impacts on these bait stocks. **SG100 is met.**

Atlantic sailfish

For Atlantic sailfish there are measures in place to aiming to prevent the spawning biomass decreasing toward the PRI. ICCAT Recommendation 16-11 limits catches of Atlantic sailfish to 67% of the average estimate of the MSY (i.e. 1,271 t for the East Atlantic stock and 1,030 t for the West Atlantic stock), which if exceeded in any year will result in the Commission reviewing the implementation and effectiveness of the recommendation. There are also voluntary measures to reduce mortality such as releasing live sailfish, encouraging or requiring the use of circle hooks or other effective gear modifications, implementing a minimum size, and/or limiting days at sea. There are also provisions for data collection and reporting. According to the latest stock assessment in 2023 the eastern stock is above the PRI and the stock status for the western stock is likely to be overfished but not overfishing (ICCAT, 2023). In the absence of a formal harvest strategy, management procedure and/or limit or target reference points set for this stock, coupled with uncertainty in the stock assessment, catches that have exceeded the latest recommendation with no review by ICCAT, the assessment team considered the measures in place to be **insufficient to meet the requirements for SG100.**

Minor primary species are as follows:

- Blue marlin
- Porbeagle shark
- North Atlantic blue shark
- South Atlantic blue shark
- North Atlantic swordfish
- South Atlantic swordfish
- South Atlantic shortfin mako
- Pacific sardine (Pacific stock)
- Pacific sardine (Tsushima stock)

Blue marlin

For Atlantic blue marlin there are measures in place to aiming to prevent the spawning biomass decreasing toward the PRI. ICCAT Recommendation 19-05 limits catches of blue marlin to 1,670 t with allocated landing limits for CPCs. There are also provisions for live release (at haul) requirements and minimum standards for safe handling and live release, data collection and reporting. According to the latest stock assessment (ICCAT, 2019f) this stock is above the PRI, suggesting that the management regime has been somewhat effective, but historical catches have generally exceeded 2,000 t (CCAT, 2019f). In the absence of a formal harvest strategy, management procedure and/or limit or target reference points set for this stock, the assessment team considered the measures in place to **be insufficient to meet the requirements for SG100.**

Porbeagle shark

For porbeagle shark there is a specific recommendation in place (ICCAT Recommendation 15-06), but it is now outdated and does not institute any catch limits (TAC). It only has safe handling and release measures in place for sharks alive at haul and data collection and reporting obligations. It is noted the Recommendation will be reviewed after the next stock assessment but there hasn't been an update in years and the results of the latest one were highly uncertain for most stocks (ICCAT, 2019c). In the absence of a formal harvest strategy,

management procedure and/or limit or target reference points set for this stock, coupled with uncertainty in the stock assessment, no catch limits in place and no recent review or update of ICCAT Recommendation 15-06, the assessment team considered the measures in place to be **insufficient to meet the requirements for SG100**.

South Atlantic blue shark

The combined 2023 assessment results indicated that South Atlantic blue shark was not overfished, with $B_{2021}/B_{MSY} = 1.29$ (95% CI: 0.89–1.81), but that overfishing was occurring, with $F_{2021}/F_{MSY} = 1.03$ (95% CI: 0.45–1.55). The stock is therefore above B_{MSY} and above the PRI proxy of $0.5B_{MSY}$, but fishing mortality is slightly above F_{MSY} . Recent catches used in the assessment projections averaged approximately 35,000 t for 2019–2021, which was above the previous TAC and above the estimated MSY of 27,711 t. ICCAT projections indicated that maintaining these catch levels would lead to a rapid decline in biomass, with a risk of falling below 20% of B_{MSY} within a few years.

Following the 2023 assessment, ICCAT adopted Recommendation 23-11, replacing Recommendation 19-08, and established an annual TAC of 27,711 t for South Atlantic blue shark. The Recommendation also establishes CPC catch limits, catch recording and reporting requirements, data collection obligations, release provisions for non-retained sharks, and requests SCRS to advise on the feasibility and roadmap for developing an MSE framework, including candidate harvest control rules and associated candidate limit, target and threshold reference points. These measures, together with regular stock assessments by ICCAT, constitute a partial strategy to manage the UoA impact on South Atlantic blue shark. **SG60 and SG80 are met**. However, SG100 is not met because overfishing was estimated to be occurring in the latest assessment, recent catches had exceeded the previous TAC and MSY level, and there is not yet a fully developed harvest strategy, adopted management procedure, or formal limit and target reference points for this stock.

North Atlantic blue shark

For the combined assessment results indicated that the stock was at approximately the MSY level, with $B_{2021}/B_{MSY} = 1.00$ (95% CI: 0.75–1.31), and that fishing mortality was below F_{MSY} , with $F_{2021}/F_{MSY} = 0.70$ (95% CI: 0.50–0.93). The stock is therefore not overfished and not subject to overfishing. As the lower bound of the biomass confidence interval is above the PRI proxy of $0.5B_{MSY}$, the stock is considered highly likely to be above the PRI.

Following the 2023 assessment, ICCAT adopted Recommendation 23-10, replacing Recommendations 19-07 and 21-10, and established an annual TAC of 30,000 t for North Atlantic blue shark. The Recommendation also includes CPC catch limits, overcatch adjustment provisions, catch recording and reporting requirements, data collection obligations, release provisions for non-retained sharks, and a request for SCRS to advise on the feasibility and roadmap for developing an MSE framework, including candidate harvest control rules and associated candidate limit, target and threshold reference points. The 2023 assessment indicated that recent catches of about 23,500 t would maintain the stock in the green quadrant of the Kobe plot with a probability of at least 50% through the projection period, while catches at or above 35,000 t would be high risk and not sustainable in the long term. These Recommendations, together with regular ICCAT stock assessments and reporting obligations, constitute a partial strategy to manage the UoA impact on North Atlantic blue shark. **SG60 and SG80 are met**. However, SG100 is not met because, although the stock is not overfished and not subject to overfishing, ICCAT has not yet adopted a fully developed harvest strategy, management procedure, or formal limit and target reference points for this stock.

North Atlantic swordfish

For north Atlantic swordfish, there are measures in place aiming to prevent the spawning biomass decreasing toward the PRI. ICCAT adopted catch limits (TACs) under ICCAT Recommendation 17-02 to limit catches to 13,200 t between 2018 and 2021, which was extended through to 2022 by ICCAT Recommendation 21-02. Catches have remained below this amount since implementation (ICCAT, 2022). There are also in place reporting obligations

and prohibitions on taking of and landing swordfish weighing less than 25kg live weight, or in the alternative 125cm lower jaw fork length (i.e. minimum size limits). According to the latest stock assessment (ICCAT, 2022) this stock is fluctuating around MSY, suggesting that the management regime has been effective, and catches have been below the MSY and TAC level in recent years. There are no limit or target reference points set for this stock and a harvest strategy has not been adopted as yet. Evidence suggests that the Taiwanese longline fleet has been compliant with allocated catch limits set under ICCAT Recommendation 21-02, with their annual north Atlantic swordfish limits (TACs) for 2018 to 2020 amounting to 270 t and total catches for the same period 162 t, 115 t and 158 t respectively (See: Taiwan Annual Report in ICCAT (2021)). These Recommendations covering the UoA vessels (which are updated regularly), Taiwanese catches compliance with individual TACs, together with regular stock assessments carried out by ICCAT, constitute a partial strategy to manage the UoA impact on north Atlantic swordfish, however **SG100 is not met** due to the absence of a harvest strategy, management procedure and/or limit or target reference points set for this stock.

South Atlantic swordfish

For South Atlantic swordfish, there are measures in place aiming to prevent stock biomass from declining toward the PRI and to support rebuilding toward BMSY. The most recent ICCAT stock assessment was conducted in 2022 using data up to 2020. The assessment estimated the stock to be below BMSY, with $B_{2020}/BMSY = 0.77$ (95% CI: 0.53–1.11), and fishing mortality to be slightly above FMSY, with $F_{2020}/FMSY = 1.03$ (95% CI: 0.67–1.51). ICCAT therefore considered the stock to be overfished and subject to overfishing.

Although the stock is below BMSY, the lower bound of the 95% confidence interval for $B_{2020}/BMSY$ remains above the PRI proxy of 0.5BMSY. Therefore, the stock is considered highly likely to be above the PRI. However, because biomass is below BMSY and fishing mortality is above FMSY, the stock cannot be considered to be fluctuating around a level consistent with MSY.

Management measures are in place through ICCAT Recommendation 22-04, which establishes country-specific TACs and sets a total TAC of 10,000 t for South Atlantic swordfish. Recent reported catches have been below or close to this TAC, with 2024 yield reported at 9,264 t. ICCAT projections indicate that maintaining the current TAC of 10,000 t would result in a 52% probability of the stock being in the green quadrant of the Kobe plot by 2033, while catches below 10,000 t would accelerate rebuilding.

These measures, together with regular ICCAT stock assessments, catch reporting requirements, TAC allocation and monitoring of stock status, constitute a partial strategy to manage the UoA impact on South Atlantic swordfish. **SG60 and SG80 are met.** However, SG100 is not met because the stock is currently estimated to be overfished and subject to overfishing, the rebuilding probability under the current TAC is only moderate, and ICCAT has not yet adopted a fully tested harvest strategy, management procedure, or formal limit and target reference points for the South Atlantic swordfish stock.

Pacific sardine (Pacific stock)

For Japanese sardine, Pacific stock, there are measures in place aiming to prevent spawning biomass from declining toward the PRI and to maintain the stock around levels consistent with MSY. The latest stock assessment was published in 2025 and provides MSY-based reference points and stock-status estimates for 2024. The assessment estimated 2024 spawning stock biomass at 2.699 million t, compared with SBMSY of 1.432 million t, giving $SSB/SBMSY = 1.89$. The stock is therefore above the biomass level associated with MSY and well above the proposed limit reference point of 0.530 million t and the proposed fishing-ban level of 0.053 million t. On this basis, the stock is highly likely to be above the PRI.

However, the same assessment estimated fishing pressure in 2024 at $F/FMSY = 2.14$. Therefore, although the stock is not overfished, fishing pressure is above the level associated with MSY. The assessment also notes that fishing pressure has increased in recent years. This indicates that current exploitation is not fully consistent with maintaining the stock at MSY in the long term unless management measures reduce fishing pressure.

The stock is subject to regular stock assessment, catch monitoring and management reference points, including a proposed target reference point based on SBMSY, a proposed limit reference point and a proposed fishing-ban level. These measures, together with ongoing assessment and management review, constitute a partial strategy to manage the UoA impact on the stock. **SG60 and SG80 are met.** However, SG100 is not met because fishing pressure is currently above FMSY and the stock is not clearly demonstrated to be managed under a fully tested harvest strategy or management procedure that ensures long-term maintenance around MSY.

South Atlantic shortfin mako

For South Atlantic shortfin mako, there are measures in place aiming to reduce fishing mortality and prevent further decline in spawning stock fecundity. The most recent ICCAT stock assessment was conducted in 2025 using data up to 2023. The assessment reviewed both Bayesian surplus production models, JABBA, and an integrated age-structured Stock Synthesis model. However, the Group agreed not to use JABBA results for stock management advice because conflicting information between catch and CPUE data produced implausible results unless CPUE time blocks were introduced. Management advice was therefore based on two Stock Synthesis catch scenarios assuming higher productivity, which were given equal weighting.

The combined Stock Synthesis results estimated median MSY at 1,648 t (95% CI: 1,519–1,795 t). The median estimate of SSF2023/SSFMSY was 0.949 (95% CI: 0.763–1.179), indicating that the stock was likely overfished in 2023. The median estimate of F2023/FMSY was 1.052 (95% CI: 0.837–1.287), indicating that overfishing was likely occurring. The Kobe plot probabilities indicated a 50.5% probability that the stock was both overfished and subject to overfishing, with only a 17.1% probability of being in the green quadrant.

Although the stock is likely overfished and subject to overfishing, the lower bound of the 95% confidence interval for SSF2023/SSFMSY is above the PRI proxy of 0.5SSFMSY. Therefore, the stock can be considered highly likely to be above the PRI. However, it cannot be considered to be fluctuating around a level consistent with MSY because median spawning stock fecundity is below SSFMSY and median fishing mortality is above FMSY.

Management measures are in place through ICCAT Recommendation 22-11, which establishes a management plan for South Atlantic shortfin mako caught in association with ICCAT fisheries. The Recommendation aims to counteract overfishing and gradually rebuild biomass to levels capable of supporting MSY. It established a retention allowance of 1,295 t for 2023 and 2024, requires reporting of landings, dead discards and live releases, prohibits transshipment, requires safe handling and live release procedures, and from 2025 allows retention only when the shark is dead at haulback and the vessel has an observer or functioning electronic monitoring system on board.

Recent catches have declined substantially, from an average of 2,558 t during 2020–2022 to 864 t during 2023–2024, and are now below the current retention allowance under Rec. 22-11. ICCAT indicated that total removals of 1,295 t, including landings, dead discards and post-release mortality, would bring the stock to the green quadrant of the Kobe plot with at least 66% probability by 2050, whereas higher total mortality levels would have very low probabilities of achieving this outcome.

These measures, together with regular ICCAT assessment, reporting obligations, catch limits, safe-handling requirements and ongoing scientific review, constitute a partial strategy to manage the UoA impact on South Atlantic shortfin mako. **SG60 and SG80 are met.** However, SG100 is not met because the stock is currently estimated to be likely overfished and subject to overfishing, the probability of being in the green quadrant remains low, and there is not yet a fully developed harvest strategy, management procedure, or adopted formal limit and target reference points for this stock.

Pacific sardine (Tsushima stock)

For Japanese sardine, Tsushima stock, there are measures in place aiming to prevent spawning biomass from declining toward the PRI and to rebuild the stock toward the MSY level. The latest stock assessment was published in 2025 and provides MSY-based reference points and stock-status estimates for 2024. The assessment estimated 2024 spawning biomass at 729,000 t, compared with SBMSY of 1,089,000 t, giving SB2024/SBMSY = 0.67. The

stock is therefore below the target reference point, but remains above the proposed limit reference point of 454,000 t and above the fishing-ban level of 65,000 t.

Fishing pressure in 2024 was estimated to be below the level associated with MSY, with $F_{2024}/F_{MSY} = 0.44$. The stock is therefore not subject to overfishing. Although biomass is below SBMSY, it remains above the limit reference point and above the PRI proxy of $0.5SBMSY$. On this basis, the stock is considered highly likely to be above the PRI.

The stock is subject to regular assessment, catch monitoring and MSY-based management reference points, including a proposed target reference point, limit reference point and fishing-ban level. The assessment also presents a harvest control rule proposal using a β adjustment to FMSY, with projections indicating that spawning biomass is expected to increase and subsequently remain around or above the target reference point under the proposed management rule. These measures constitute a partial strategy to manage the UoA impact on the stock. **SG60 and SG80 are met.** However, SG100 is not met because current spawning biomass remains below SBMSY and the stock is not yet clearly demonstrated to be fluctuating around the MSY level.

Management strategy evaluation				
b	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?	Main species: Yes Minor species: Yes	Main species: Yes Minor species: Yes	Main species: No Minor species: No

Rationale

Pacific chub mackerel

Testing does not appear to have occurred and therefore is not available to support high confidence that the partial strategy/strategy will work. **SG100 is not met.**

Atlantic sailfish

For Atlantic sailfish, the measures in place are considered likely to work and there is some objective basis for confidence that they are capable of managing UoA impacts. ICCAT Rec. 16-11 establishes management measures for the conservation of Atlantic sailfish, including requirements for CPCs to limit sailfish mortality and improve catch, discard and reporting information. These measures are supported by periodic ICCAT stock assessments and scientific advice.

The most recent ICCAT assessment was conducted in 2023. For the East Atlantic stock, ICCAT used the final JABBA model to conduct stochastic projections under alternative constant catch scenarios and to estimate Kobe II Strategy Matrices. For the West Atlantic stock, ICCAT agreed to base scientific advice on the combined results of the selected JABBA and Stock Synthesis models, with stock projections carried out under alternative constant catch scenarios and combined to produce Kobe matrices. These projections provide an objective basis for evaluating whether current or alternative catch levels are expected to maintain or improve stock status. However, these projections do not constitute a full Management Strategy Evaluation. ICCAT has not yet adopted a formal management procedure or MSE-tested harvest control rule for Atlantic sailfish, and there are no adopted formal limit and target reference points specifically used to trigger management action for this species. In addition, the 2023 assessment identified remaining uncertainties, including incomplete catch and abundance information from some important small-scale fisheries, particularly for the East Atlantic stock. Therefore, while

SG60 and SG80 are met for PI 2.1.2b, SG100 is not met because the partial strategy has not been fully tested through MSE and there is not high confidence that it will work under the full range of relevant uncertainties.

Minor primary species

Minor species are scored at the SG100 level only; **SG60 and SG80 are therefore met by default**. Minor primary species include Atlantic blue marlin, porbeagle shark, North and South Atlantic swordfish, South Atlantic shortfin mako, Pacific sardine (Pacific and Tsushima stocks), and North and South Atlantic blue shark. Although all these species were considered to have at least a partial strategy in place, the poor stock status of North Atlantic stocks of porbeagle shark, coupled with the lack of catch limits and update to ICCAT Recommendation 15-06 in particular (ICCAT, 2022) means there is no high confidence that the strategy will work for that species. Applying the ‘all or none’ approach **SG100 is not met** for minor species.

Management strategy implementation				
C	Guide post		There is some evidence that the measures/partial strategy is being implemented successfully.	There is clear evidence that the partial strategy/strategy is being implemented successfully and is achieving its overall objective as set out in scoring issue (a).
	Met?		All primary species: Yes	All primary species: No

Rationale

Atlantic sailfish

Atlantic sailfish catch in 2024 in eastern and western stocks did not exceed the MSY levels of catch, indicating some measures are being implemented effectively and successfully. While overfished in western stock is occurring, the species overall are above the PRI as outlined in PI 2.1.1a. SG80 should be scored as met. Nonetheless, considering the non-comprehensive level of observer coverage for the UoA fleet and the fact that bait purchase records are self-reported (similar to logbooks) and have inconsistencies, **SG100 is not met**.

Pacific chub mackerel

Management measures have been strengthened through NPFC CMM 2025-07, which entered into force on 1 June 2025 and amended CMM 2024-07. The measure establishes a provisional annual total allowable catch of 66,740 t for chub mackerel in the Convention Area for the 2025 fishing season, with gear-specific limits of 7,940 t for trawlers and 58,800 t for purse seiners. It also limits expansion of authorised vessels, prohibits vessels over 10,000 GT from fishing for chub mackerel in the Convention Area, requires vessels to record catches, incidental catches and discards, requires monthly catch reporting that becomes weekly once 60% of the catch limit is reached, requires the Executive Secretary to publish compiled catch information, and requires fishery closure within two days once 95% of the relevant catch limit is reached. VMS requirements, annual data reporting by Convention Area and adjacent national waters, and IUU-related cooperation are also included.

These measures show that the management framework is operational and that implementation mechanisms are in place. The existence of catch limits, reporting requirements, in-season monitoring, closure provisions and regular stock assessment provides some evidence that the measures/partial strategy are being implemented. Therefore, **SG80 is met**. However, the latest stock assessment indicates that current fishing mortality would lead to continued decline in SSB and that current fishing mortality needs to be reduced. The assessment specifically recommends development of a stock-specific HCR through an MSE process within the next 2–3 years. Therefore, although there is evidence of implementation, there is not clear evidence that the partial strategy or strategy is achieving its overall objective. SG100 is not met.

Minor primary species

Minor species are scored at the SG100 level only; **SG60 and SG80 are therefore met by default**. Owing to the non-comprehensive level of observer coverage in the fishery under assessment and the fact that bait purchase records are self-reported (similar to logbooks) and have inconsistencies, the team felt that clear evidence of its successful implementation is lacking. **SG100 is not met** for minor species.

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?	Yes	No	No

Rationale

Only north and south Atlantic blue shark, as well as porbeagle shark and shortfin mako shark (South Atlantic) are relevant to this scoring issue. ICCAT Recommendation 04-10 requires that CPCs take measures to ensure fishers fully utilise any retained catches of sharks and that a 5% shark fin: carcass ratio is demonstrated for retained sharks. There is also a prohibition on vessels from retaining on board, transshipping, landing or trading any shark fins and fisheries not directed at sharks should have in place measure to encourage live release of sharks caught incidentally and are not used for food/subsistence. Additionally, ICCAT Recommendation 18-06 requires comprehensive reporting by CPCs on their implementation of ICCAT shark measures, while ICCAT Recommendations 19-07 and 19-08 establish conservation measures and reporting requirements specific to north and south Atlantic blue sharks caught by ICCAT fisheries. ICCAT Recommendation 22-11 also sets out retention limits and conservation measures and reporting requirements specific to South Atlantic shortfin mako sharks. Target and bycatch species fate codes were provided with the client-supplied logbook data and suggested that no shark finning incidents occurred on any trips.

The fishery under assessment has demonstrated the Shark and Turtle Conservation Policy in place for the vessels. Both policies apply to all vessels and include requirements that there must be no shark finning onboard the vessels. Further, the policies state that any sharks landed must have “fins naturally attached”. All vessels are under the requirements of the aforementioned ICCAT Recommendations to prevent shark finning. Therefore, it is deemed “likely” that shark finning is not taking place. **SG60 is met**. However, without specific observer data to evidence that this act is not occurring, the assessment team cannot state that it is “highly likely” that shark finning is not occurring. **SG80 is not met**.

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?	Main species: Yes Minor species: Yes (default)	Main species: Yes Minor species: Yes (default)	Main species: No Minor species: No
Rationale				
Unwanted catch is defined under MSC GSA 3.1.6 as including: “that part of the catch that has been thrown away or slipped where the components of that catch may not survive after release”. Atlantic sailfish, the main primary species associated with this fishery, is 100% retained in this fishery’s logbook. Pacific chub mackerel, on the other hand, is used as bait. However, as Pacific chub mackerel is the target species for bait, these are not considered necessary to score these SIs. Therefore, default is met for main species. According to logbook, this fishery discards billfishes except for sailfish, due to business preference and catch limits. In addition, they do not want to retain juvenile tunas, however, no further information about released fate is available. ICCAT does not have any Recommendations in place aiming to improve the survivability of unwanted catch. Rec. 17-02 and 17-03 specifies that CPCs should introduce measures to prohibit landing SWO weighting less than 25 kg, or 125 cm lower jaw fork length. however, it is not clear that if such policy will also reduce SWO mortality. Similar situation applies to blue shark as well. However, instead of prohibiting the catch of species lower than a certain weight or length, ICCAT provisions detailed fishing information including retained and discarded individual and size data. The Commission also encourages CPCs to conduct biological research to collect biological/ecological parameters, life-history, migrations, post-release survivorship and behavioural traits of blue sharks. The fishery has a Policy Prohibiting Shark Finning, and Shark and Turtle Conservation Policy, both of which include measures required to minimise shark bycatch and prevent shark finning. The Policy stipulates that all vessels shall only use circle hooks and monofilament line to reduce shark bycatch and shall not use “shark lines” at any time or wire trace. ICCAT also requires that longline vessels prohibit the use of shark lines and wire trace, requirements to use monofilament line and circle hooks. However, as minor species are only considered in SG100, and there is no biennial review of the effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all primary species, SG100 is not met.				

Overall Performance Indicator (PI) Rationale

Draft scoring range	60 – 79
Information gap indicator	Information sufficient to score PI
Data-deficient? (Risk-Based Framework needed)	No

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?	Main species: Yes	Main species: No	Main species: No
Rationale				
Some quantitative information is available and is adequate to assess the impact of the fishery on the status of all main primary species (Table 2), including the bait species (Pacific chub mackerel). However, the observer data is currently absent in this fishery and the veracity of logbook discard records (in particular) is highly uncertain and likely underreported. Therefore, SG60 is met but not SG80.				

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 species with respect to status.
	Met?			Minor species: Yes
Rationale				
For each minor primary species there is a stock assessment undertaken and UoA catch can be determined from the data sources listed in the obtained logbook. This coupled with the relatively low volume of catches of these species by the UoAs (Table 2) provides some quantitative information on the UoAs impact with respect to minor primary species. As detailed in GSA3.6, SG100 for minor primary species is equivalent to SG80 for main primary species, which means there is adequate information to estimate the impact of the UoA on minor primary species with respect to status. 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?	Main species: Yes Minor species: Yes (default)	Main species: No Minor species: Yes (default)	Main species: No Minor species: No

Rationale

Main primary species

The UoA has some information from logbook that is adequate to support some measures to manage them accordingly and detect changes in risk levels to those species from UoA-level operations. While it is likely that the reporting of bycatch and ETP species is lacking in the logbooks (based on the species composition observed in the observer data), the logbook data is probably a more accurate reflection of the catch of main primary species rather than ETP species, which are rare events. Therefore, **SG60 are met** for the main primary species. However, observer coverage is currently not available to provide a high degree of certainty for the UoA fleet. Therefore, **SG80 is not met**.

Minor primary species

Minor species are assessed at the SG100 level only and **SG60 and SG80 are therefore met by default**. For the UoA fleet, the observer coverage is currently not available to provide a high degree of certainty. Therefore, SG100 is not met.

Overall Performance Indicator (PI) Rationale

Draft scoring range	60 – 79
Information gap indicator	Information sufficient to score PI
Data-deficient? (Risk-Based Framework needed)	No

PI 2.2.1 – Secondary species outcome

PI 2.2.1		The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit		
Scoring Issue		SG 60	SG 80	SG 100
a	Main secondary species stock status			
	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 hinder recovery and rebuilding.	Main secondary species are highly likely to be above biologically based limits. OR If below biologically based limits, there is either evidence of recovery or a demonstrably effective partial strategy in place such that the UoA does not hinder recovery and rebuilding. AND Where catches of a main secondary species outside of biological limits are considerable, there is either evidence of recovery or a, demonstrably effective strategy in place between those MSC UoAs that have considerable catches of the species, to ensure that they collectively do not hinder recovery and rebuilding.	There is a high degree of certainty that main secondary species are above biologically based limits.
	Met?	NA	NA	NA
Rationale				
Based on logbook and bait data, no main secondary species were identified, Sla is considered as NA.				

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 Table 2 shows the minor secondary species in the UoA, including: • Mahi mahi • Oilfish • Black marlin • Striped marlin • Wahoo • Muroaji (bait) The score is capped at 80 as RBF was not undertaken on minor stocks PF 5.3.2.2 SG100 is not met for minor species.				

Overall Performance Indicator (PI) Rationale

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?	Main species: NA Minor species: Yes (default)	Main species: NA Minor species: Yes (default)	Main species: NA Minor species: No
Rationale <u>Main secondary species</u> Based on logbook and bait data, no main secondary species were identified, score is considered irrelevant to main species. <u>Minor secondary species</u> Note that minor species are only considered at the SG100 level; SG60 and SG80 are therefore met by default. There is a long list of minor secondary species in Table 2, not all of which are managed. 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/species).	There is some objective basis for confidence that the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or species involved.
	Met?	Main species: NA Minor species: Yes (default)	Main species: NA Minor species: Yes (default)	Main species: NA Minor species: No
Rationale <u>Main secondary species</u> Based on the logbook and bait data, no main secondary species were identified. This scoring issue is not relevant for main species. <u>Minor secondary species</u> Note that minor species are only considered at the SG100 level; SG60 and SG80 are therefore met by default. There is a long list of minor secondary species, not all of which are managed. 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?		Main species: NA Minor species: Yes (default)	Main species: NA Minor species: No
Rationale <u>Main secondary species</u> Based on the logbook and bait data, no main secondary species were identified. This scoring issue is not relevant for main species. <u>Minor secondary species</u> Note that minor species are only considered at the SG100 level; SG60 and SG80 are therefore met by default. There is a long list of minor secondary species, not all of which are managed. 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?	Yes	Yes	No
Rationale Although logbook data may be underreported, the current data we acquired indicates no shark species is categorised as secondary species in the UoA fleet. SG80 can be met but will be reassessed once observer data is available to conduct further assessment.				

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-related mortality of unwanted catch of main secondary species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main secondary species and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all secondary species, and they are implemented, as appropriate.
	Met?	Main species: NA Minor species: Yes (default)	Main species: NA Minor species: Yes (default)	Main species: NA Minor species: No
Rationale <u>Main secondary species</u>				

Based on the logbook and bait data, no main secondary species were identified. This scoring issue is not relevant for main species.

Minor secondary species

Note that minor species are only considered at the SG100 level; **SG60** and **SG80** are therefore met by default. There is a long list of minor secondary species, not all of which are managed. SG100 is not met.

Overall Performance Indicator (PI) Rationale

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

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.	Some quantitative information is available and adequate to assess the impact of the UoA on main secondary species with respect to status.	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.
		OR	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.	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.	
	Met?	NA	NA	NA
Rationale				
Based on the logbook and bait data, no main secondary species were identified. This scoring issue is not relevant for main species.				
This PI will be reassessed once observer data is available to conduct further assessment.				

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				
There are a number of minor secondary species for the UoA fleet. The information provided for these stocks in terms of catch (landings and discards) provides some indication of the extent of UoA impacts. However, in most cases, little is known about the stock structure and status, as well as possible issues with species identification, so SG100 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?	Main species: NA Minor species: Yes (default)	Main species: NA Minor species: Yes (default)	Main species: NA Minor species: No

Rationale

Main secondary species

Based on the logbook and bait data, no main secondary species were identified. This scoring issue is not relevant for main species.

Minor secondary species

Note that minor species are only considered at the SG100 level; **SG60** and **SG80** are therefore met by default. There is a long list of minor secondary species, not all of which are managed. SG100 is not met.

This PI will be reassessed once observer data is available to conduct further assessment.

Overall Performance Indicator (PI) Rationale

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

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?	North Atlantic shortfin mako: Yes	North Atlantic shortfin mako: Yes	North Atlantic shortfin mako: No
Rationale The only ETP species with national or international limits set is North Atlantic shortfin mako shark as per ICCAT Recommendation 21-09. <u>North Atlantic shortfin mako</u> Shortfin mako sharks are a coastal, oceanic species occurring from the surface to at least 500 m depth and are widespread in temperate and tropical waters of all oceans from about 50°N (up to 60°N in the northeast Atlantic) to 50°S. Although there are many records from tagging programmes of trans-oceanic and trans equatorial migrations, genetic research in the Atlantic suggests that the global distribution of shortfin mako is composed of several distinct populations. Shortfin mako sharks in the north and south Atlantic are genetically distinct (Heist et al. 1996) and thus managed as separate stocks by ICCAT. Shortfin mako shark is considered “endangered” on IUCN red list. Logbook data shows 8.2 t (230 individuals) of mako sharks were caught and discarded between 2023 and 2025. In the absence of information on post-release mortality we assume a 100% post release mortality, which means a total mortality of 230 individuals annually if we take the precautionary approach and assume all individuals are from the northern stock. A stock assessment was undertaken for North Atlantic shortfin mako shark in 2017, the latest one in 2025 did not provide reliable stock information. Results of nine stock assessment model runs were selected to provide stock status and management advice. Although all results indicated that stock abundance in 2015 was below BMSY, results of the production models were more pessimistic (B2015/BMSY deterministic estimates ranged from 0.57 to 0.95) than those of the integrated age-structured model (Stock Synthesis), which indicated that stock abundance was near MSY (SSF/SSFMSY = 0.95 where SSF is spawning stock fecundity). Fishing mortality was overwhelmingly above FMSY, with a combined 90% probability from all the models of being in an overfished state and experiencing overfishing. ICCAT Recommendation 21-09 pertains to the protection of the North Atlantic shortfin mako shark population. According to this Recommendation 21-09, CPCs are obligated to institute a comprehensive plan for the recovery of the North Atlantic shortfin mako shark population. This plan is scheduled to commence in 2022, with the primary goal of ending overfishing and gradually attaining a biomass level that can sustain the MSY by the year 2070. The recommended likelihood for achieving this goal falls within the range of 60% to 70%, at minimum. To initiate stock rebuilding, CPCs are required to enforce a ban on the retention, transshipment, and landing of North Atlantic shortfin mako sharks, whether whole or in parts, that are captured in conjunction with ICCAT-related fishing activities. This prohibition will be effective for the years 2022 and 2023. Importantly, the collective fishing				

mortality tonnage—which encompasses the cumulative impact of retention, deceased discards, and post-release mortality of live discards—for this stock must not surpass 250 t until new guidance from SCRS is supplied to the Commission.

Given Recommendation 21-09 sets the total mortality limit at 250 t, **SG60 and SG80 are considered met**. In the absence of clear stock delineation in the logbook and observer catches, how estimates are determined, and the ratio of individuals discarded across all overlapping fisheries, SG100 is considered not met.

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?	Oceanic whitetip shark: Yes Silky shark: Yes Bigeye thresher: Yes Hammerhead sharks: Yes	Oceanic whitetip shark: No Silky shark: No Bigeye thresher: No Hammerhead sharks: No	Oceanic whitetip shark: No Silky shark: No Bigeye thresher: No Hammerhead sharks: No

Rational

The ETP species according to this UoA (Table 2) includes:

- Hammerhead shark – 132 individuals; 4,726 kgs
- Mako sharks (North Atlantic shortfin mako) – 230 individuals; 8,205 kgs (undifferentiated)
- Oceanic whitetip shark – 79 individuals; 2,357 kgs
- Silky shark – 210 individuals; 6,466 kgs
- Thresher shark – 118 individuals; 4,120 kgs

Elasmobranchs

Elasmobranchs (sharks and rays) were the main group of ETP species interacting with the fishery under assessment. In total, 769 individuals were recorded by logbook between 2023 and 2025. The estimated total catch of other elasmobranch species was relatively low. However, discarded species may be underreported in logbook. This PI will need to be re-examined once observer data obtained.

Oceanic whitetip shark

Oceanic whitetip sharks are distributed worldwide in epipelagic tropical and subtropical waters (warmer than 20°C) between the latitudes of 30° North latitude and 35° South. Oceanic whitetip shark is considered “critically endangered” on IUCN red list. Logbook data from the UoA fleet suggest an average 26 individuals (0.786 t) were caught annually between 2023 and 2025. Post release survival has been estimated to range from 68%-92% depending on the condition of the animal prior to release (Hutchinson and Bigelow, 2019). Medium hooking mortality rates (34%) were also reported by Coelho et al. (2012) for the Portuguese longline fishery over the Atlantic Ocean. We assume a 100% post release mortality, which means a total mortality of 9 individuals annually. There is currently no quantitative stock assessment for this species and basic fishery indicators are limited. Cortes et al. (2015) conducted an ERA using PSA methods on sixteen species of sharks and rays to assess their vulnerability to pelagic longline fisheries in the Atlantic Ocean. Three metrics were used to calculate vulnerability (Euclidean distance, a multiplicative index, and the arithmetic mean of the productivity and susceptibility ranks). Oceanic whitetip sharks were assigned (i) the highest risk (rank 4 of all species assessed) for vulnerability as calculated using the Euclidean distance, (ii) low vulnerability (rank 13) for vulnerability as calculated using the multiplicative index and (iii) medium risk (rank 8) for vulnerability as calculated using arithmetic mean of the

productivity and susceptibility ranks. Retention of oceanic whitetip shark in the Atlantic Ocean is banned and individuals must be released under ICCAT Recommendation 10-07.

Average reported ICCAT catch for oceanic whitetip shark was very low— 2 t in 2018-2020 and 1 t in 2021 according to ICCAT Task I. These are likely to be underestimates due to the species being discarded under ICCAT Recommendation 10-07 and reporting of total dead discards and live releases being poor within ICCAT (ICCAT, SCRS, 2021; ICCAT, SCRS, 2022). Mucientes et al. (2022) highlighted significant underreporting of discards from three species of sharks (bigeye thresher, oceanic whitetip and smooth hammerhead) by ICCAT member nations' longline vessels. They noted that the total discards made by a single observed vessel in April–June 2018 in the eastern tropical Atlantic exceeded by 1.3–11.0 times the discards reported officially for these species Atlantic-wide for all of 2018. Another example is Forget et al. (2021) who assessed the accuracy of observer records (from 2016) for tuna purse seine fisheries including in the Atlantic Ocean and found that shark counts were systematically being underestimated, by on average 9% to 40% at the fishing trip level.

UoA mortality is unknown. Given the low UoA catches, the assessment team considered that the direct effects of the UoA are highly likely to not hinder recovery of this species. **SG60 is met**. However, considering the ERA vulnerability scores (Cortes et al. 2015), the absence of observer coverage in the fishery and a lack of population estimates for this species from a stock assessment, there can be no high degree of confidence and **SG80 is not met**.

Silky shark

Silky sharks are distributed worldwide in epipelagic tropical and subtropical waters in the Atlantic, Pacific and Indian oceans. Silky shark is considered “vulnerable” on the IUCN red list. Logbook data from the UoA fleet suggest an average 70 individuals (2.16 t) were caught annually between 2023 and 2025. Post release survival has been estimated to range from 95-100% (Hutchinson and Bigelow, 2019), 56% (ABNJ, 2019) and 44% (Curran 2014). Medium hooking mortality rates (55.8%) were also reported by Coelho et al. (2012) for the Portuguese longline fishery over the Atlantic Ocean. On the basis of these records we assume a 50% post release mortality, which means a total mortality of 35 individuals annually.

There is currently no quantitative stock assessment for this species and basic fishery indicators are limited. Cortes et al. (2015) conducted an ERA using PSA methods on sixteen species of sharks and rays to assess their vulnerability to pelagic longline fisheries in the Atlantic Ocean. Three metrics were used to calculate vulnerability (Euclidean distance, a multiplicative index, and the arithmetic mean of the productivity and susceptibility ranks). South Atlantic silky shark were assigned (i) the lowest risk (rank 12 of all species assessed) for vulnerability as calculated using the Euclidean distance, (ii) high vulnerability (rank 5) for vulnerability as calculated using the multiplicative index and (iii) medium risk (rank 6) for vulnerability as calculated using arithmetic mean of the productivity and susceptibility ranks. North Atlantic silky sharks were assigned (i) medium risk (rank 5); (ii) low risk (rank 11) and; (iii) medium risk (rank 8). Retention of silky shark in the Atlantic Ocean is banned and individuals must be released under ICCAT Recommendation 11-08.

Average reported ICCAT catch for silky shark was 658 t in 2018, 277 t in 2019, 318 t in 2020 and 263 t in 2021, according to ICCAT Task I. These are likely to be underestimates due to the species being discarded under ICCAT Recommendation 11-08 and reporting of total dead discards and live releases being poor within ICCAT (ICCAT, SCRS, 2021; ICCAT, SCRS, 2022). Mucientes et al. (2022) highlighted significant underreporting of discards from three species of sharks (bigeye thresher, oceanic whitetip and smooth hammerhead) by ICCAT member nations' longline vessels. They noted that the total discards made by a single observed vessel in April–June 2018 in the eastern tropical Atlantic exceeded by 1.3–11.0 times the discards reported officially for these species Atlantic-wide for all of 2018. Another example is Forget et al. (2021) who assessed the accuracy of observer records (from 2016) for tuna purse seine fisheries including in the Atlantic Ocean and found that shark counts were systematically being underestimated, by on average 9% to 40% at the fishing trip level.

According to Cardenosa et al., (2021), the Atlantic area (under ICCAT) contributes around 7% of the global silky shark landings, with Indo-Pacific area contributing around 93% of the global catch. This compares to a UoA

mortality in the order of 50 individuals/year (1.08 t). Given the low UoA catches, it is considered that the direct effects of the UoA are highly likely to not hinder recovery of this species. **SG60 is met.** However, considering the population declines (95% and 98% over three generations) estimated by Cortes et al., (2007), ERA vulnerability scores for both stocks of silky shark (Cortes et al. 2015) and the absence of observer coverage in the fishery, and a lack of population estimates for this species from a stock assessment, there can be no high degree of confidence and **SG80 is not met.**

Bigeye thresher shark

Bigeye thresher shark has a global distribution with and is considered “vulnerable” on IUCN red list. Scaled up observer data from the UoA fleet suggest an average 39 individuals (1.37 t) were caught annually between 2023 and 2025. Post release survival has been estimated to be up to 56% (Curran, 2014). Similar hooking mortality rates (50.6%) were also reported by Coelho et al. (2012) for the Portuguese longline fishery over the Atlantic Ocean. On this basis we assume a 50% post release mortality, which means a total mortality of 19.5 individuals annually. There is currently no quantitative stock assessment for this species and basic fishery indicators are limited. Cortes et al. (2015) conducted an ERA using PSA methods on sixteen species of sharks and rays to assess their vulnerability to pelagic longline fisheries in the Atlantic Ocean. Three metrics were used to calculate vulnerability (Euclidean distance, a multiplicative index, and the arithmetic mean of the productivity and susceptibility ranks). Bigeye thresher sharks were one of the stocks with the lowest productivity and highest susceptibility to longline fishing such that it was assigned (i) the highest risk (rank 3 of all species assessed) for vulnerability as calculated using the Euclidean distance, (ii) high vulnerability (rank 1) for vulnerability as calculated using the multiplicative index and (iii) high risk (rank 1) for vulnerability as calculated using arithmetic mean of the productivity and susceptibility ranks. Retention of bigeye thresher sharks in the Atlantic Ocean is banned and individuals must be released under ICCAT Recommendation 09-07.

Average reported ICCAT catch for bigeye thresher shark in the ICCAT Convention Area was 19 t in 2018, 14 t in 2019 and 11 t in 2020, according to ICCAT Task I. These are likely to be underestimates due to the species being discarded under ICCAT Recommendation 09-07 and reporting of total dead discards and live releases being poor within ICCAT (ICCAT, SCRS, 2021; ICCAT, SCRS, 2022). Average reported ICCAT catch for undifferentiated thresher sharks was 243 t in 2018, 241 t in 2019 and 245 t in 2020, according to ICCAT Task I. This compares to a UoA mortality in the order of 39 individuals/year (<1% of recent 2018-2020 ICCAT catches of both bigeye thresher shark and undifferentiated thresher shark catches). Given the low UoA catches, it is considered that the direct effects of the UoA are highly likely to not hinder recovery of this species. **SG60 is met.** However, considering the most recent ERA vulnerability scores (Cortes, et al. 2015) and population declines (83% over three generations) estimated by Young et al. (2016) from a relative abundance observer time series from the United State pelagic longline fishery in the northwest Atlantic and the absence of observer coverage in the fishery, there can be no high degree of confidence and **SG80 is not met.**

Hammerhead shark

The logbook data does not differentiate hammerhead shark to species specific level. Therefore, this assessment gathers the most commonly encountered hammerheads in the Atlantic Ocean, including smooth hammerheads, scalloped hammerheads, and great hammerheads.

Smooth hammerhead is a highly mobile species that can be found worldwide in coastal, temperate and tropical waters, generally between the 59°N and 55°S latitude. It is considered “vulnerable” on IUCN red list. The UoA does not have observer data, and logbook data record hammerhead sharks only as undifferentiated *Sphyrna* spp. Therefore, species-specific UoA catches of scalloped hammerhead cannot be quantified. Logbook data from the UoA fleet suggest an average 56 individuals (3.2 t) were caught annually between 2016 and 2020. According to the logbook data (2023 – 2025), 100% were discarded with unknown fate.

There is no current quantitative stock assessment for this species but one is available from 2011 (Jiao *et al.*, 2011), basic fishery indicators are limited. Cortes *et al.* (2015) conducted an ERA using PSA methods on sixteen species of sharks and rays to assess their vulnerability to pelagic longline fisheries in the Atlantic Ocean. Three metrics were used to calculate vulnerability (Euclidean distance, a multiplicative index, and the arithmetic mean of the productivity and susceptibility ranks). Smooth hammerhead sharks were one of the stocks with highest productivity and lowest vulnerability in the study, such that it was assigned (i) the lowest risk (rank 13 of all species assessed) for vulnerability as calculated using the Euclidean distance, (ii) low vulnerability (rank 17) for vulnerability as calculated using the multiplicative index and (iii) low risk (rank 18) for vulnerability as calculated using arithmetic mean of the productivity and susceptibility ranks. Furthermore, a study undertaken by Miller (2016) indicated that current global fishing levels and associated mortality are not causing declines in smooth hammerhead sharks to a point that there is a risk of extinction from overutilisation or likely to become one in the foreseeable future. Retention of hammerhead sharks (family *Sphyrnidae*) in the Atlantic Ocean is banned and individuals must be released under ICCAT Recommendation 10-08.

A study undertaken by Miller (2016) indicated that current global fishing levels and associated mortality are not causing declines in smooth hammerhead sharks to a point that there is a risk of extinction from overutilisation or likely to become one in the foreseeable future. However, it is important to note that there was very little to no available information regarding species' abundance, estimates of growth rate and population growth rate-related parameters, spatial processes, and requisite levels of diversity, which increased the uncertainty associated with the evaluation of the demographic risks. According to Miller (2016), in the Atlantic Ocean, both regional and local information indicates that smooth hammerhead sharks tend to be a rare occurrence, observed only sporadically in the fisheries data and in low numbers. Furthermore, In the northwest Atlantic, strong management measures are in place to prevent overfishing of the species. In the southwest Atlantic, while the majority of the catch appears to be juveniles, smooth hammerhead sharks are generally harvested at low levels and comprise less than 5% of the fisheries catch. This aligns with work from Cortes *et al.* (2010) who indicated that this species has a relatively low risk of interaction with pelagic fisheries, as it spends part of its life cycle in coastal waters and is therefore less susceptible to capture in oceanic fisheries.

Average reported ICCAT catch for smooth hammerhead shark was 2 t in 2018, 13 t in 2019, 4 t in 2020 and 3 t in 2021, according to ICCAT Task I. These are likely to be underestimates due to the species being discarded under ICCAT Recommendation 10-08 and reporting of total dead discards and live releases being poor within ICCAT (ICCAT, SCRS, 2021; ICCAT, SCRS, 2022). Average reported ICCAT catch for undifferentiated hammerhead sharks was 398 t in 2018, 346 t in 2019, 442 t in 2020 and 428 t in 2021, according to ICCAT Task I. Mucientes *et al.* (2022) highlighted significant underreporting of discards from three species of sharks (bigeye thresher, oceanic whitetip and smooth hammerhead) by ICCAT member nations' longline vessels. They noted that the total discards made by a single observed vessel in April–June 2018 in the eastern tropical Atlantic exceeded by 1.3–11.0 times the discards reported officially for these species Atlantic-wide for all of 2018. Another example is Forget *et al.* (2021) who assessed the accuracy of observer records (from 2016) for tuna purse seine fisheries including in the Atlantic Ocean and found that shark counts were systematically being underestimated, by on average 9% to 40% at the fishing trip level.

Great hammerhead is found worldwide in warm coastal, temperate and tropical waters, generally between the 40°N and 35°S latitude. It is considered “critically endangered” on IUCN red list. The UoA does not have observer data, and logbook data record hammerhead sharks only as undifferentiated *Sphyrna* spp. Therefore, species-specific UoA catches of scalloped hammerhead cannot be quantified. Very low hooking mortality rates (0.0%) were reported by Coelho *et al.* (2012) for the Portuguese longline fishery in the Atlantic Ocean.

There is no current quantitative stock assessment for this species but old models are available for some populations (Jiao, Hayes and Cortés, 2009), some basic fishery indicators are limited. Cortes *et al.* (2015) conducted an ERA using PSA methods on sixteen species of sharks and rays to assess their vulnerability to pelagic longline fisheries in the Atlantic Ocean. Three metrics were used to calculate vulnerability (Euclidean distance, a

multiplicative index, and the arithmetic mean of the productivity and susceptibility ranks). Great hammerhead sharks were assigned (i) the lowest risk (rank 14 of all species assessed) for vulnerability as calculated using the Euclidean distance, (ii) medium vulnerability (rank 10) for vulnerability as calculated using the multiplicative index and (iii) low risk (rank 13) for vulnerability as calculated using arithmetic mean of the productivity and susceptibility ranks. Furthermore, an ERA undertaken by Miller (2014) indicated that based on abundance trends, growth and productivity, spatial structure and diversity that the current regulatory measures in many parts of the species' range are minimising the threat of overutilisation, preventing further abundance declines in the foreseeable future and decreasing the likelihood of extinction of the global population, such that it is rated as "no or very low" to "low" risk of extinction within the next 50 years. Retention of hammerhead sharks (family *Sphyrnidae*) in the Atlantic Ocean is banned and individuals must be released under ICCAT Recommendation 10-08.

Average reported ICCAT catch for great hammerhead shark was 1 t in 2018, 0 t in 2019 and 3 t in 2020 and 1 t in 2021, according to ICCAT Task I. These are likely to be underestimates due to the species being discarded under ICCAT Recommendation 10-08 and reporting of total dead discards and live releases being poor within ICCAT (ICCAT, SCRS, 2021; ICCAT, SCRS, 2022). Average reported ICCAT catch for undifferentiated hammerhead sharks was 398 t in 2018, 346 t in 2019, 442 t in 2020 and 428 t in 2021, according to ICCAT Task I. Mucientes et al. (2022) highlighted significant underreporting of discards from three species of sharks (bigeye thresher, oceanic whitetip and smooth hammerhead) by ICCAT member nations' longline vessels. They noted that the total discards made by a single observed vessel in April–June 2018 in the eastern tropical Atlantic exceeded by 1.3–11.0 times the discards reported officially for these species Atlantic-wide for all of 2018. Another example is Forget et al. (2021) who assessed the accuracy of observer records (from 2016) for tuna purse seine fisheries including in the Atlantic Ocean and found that shark counts were systematically being underestimated, by on average 9% to 40% at the fishing trip level.

Scalloped hammerhead is a highly mobile coastal-oceanic shark occurring in tropical and temperate waters of the Atlantic Ocean. In the western Atlantic, it occurs from New Jersey to Uruguay, including the Gulf of Mexico and Caribbean, while in the eastern Atlantic it occurs off West Africa and may occur in the western Mediterranean and around the Azores. The species is classified globally as Critically Endangered on the IUCN Red List, with regional Atlantic assessments ranging from Vulnerable to Endangered.

There is no recent ICCAT-wide quantitative stock assessment for scalloped hammerhead shark in the Atlantic Ocean. The most recent regional quantitative assessment is SEDAR 77, which assessed HMS hammerhead sharks, including scalloped hammerhead, in the western North Atlantic Ocean and Gulf of Mexico. The assessment indicated that scalloped hammerhead was not overfished and that overfishing was not occurring in the terminal year, 2019. However, this assessment applies to the western North Atlantic and Gulf of Mexico and should not be interpreted as a stock assessment for the entire Atlantic Ocean. Wider Atlantic stock status remains uncertain, particularly for eastern and southern Atlantic components.

The UoA does not have observer data, and logbook data record hammerhead sharks only as undifferentiated *Sphyrna* spp. Therefore, species-specific UoA catches of scalloped hammerhead cannot be quantified. The fate of discarded hammerhead sharks is also unknown. Given this uncertainty, all recorded undifferentiated hammerhead interactions should be treated precautionarily as potentially including scalloped hammerhead shark. Where fate is unknown, a precautionary assumption of 100% mortality is appropriate for scoring purposes. Available studies indicate that scalloped hammerhead can suffer high fishing mortality when caught. Observer data from bottom longline fisheries in the northwest Atlantic and Gulf of Mexico recorded mortality of 91.4% for scalloped hammerhead, while Coelho et al. reported 57% mortality in a wider Atlantic longline context. Gulak et al. also reported at-vessel mortality of 62.9% for scalloped hammerhead caught on bottom longlines. These estimates indicate that released individuals may not necessarily survive capture, particularly where condition at release is not recorded.

Cortés et al. conducted an ecological risk assessment using productivity-susceptibility analysis for pelagic elasmobranchs caught in Atlantic pelagic longline fisheries. In that analysis, North and South Atlantic scalloped hammerhead stocks were among the lower vulnerability species, largely because susceptibility to industrial pelagic longline fisheries was estimated to be relatively low and productivity was assessed as medium-high compared with other pelagic sharks. However, this result should be interpreted cautiously because scalloped hammerhead is caught by multiple gear types, including gillnets and longlines, and across a broad range of age and size classes. The ERA therefore does not remove concern over cumulative fishing impacts. Retention of hammerhead sharks of the family Sphyrnidae, except bonnethead shark (*Sphyrna tiburo*), is prohibited in ICCAT fisheries under Recommendation 10-08. Vessels are required to release hammerhead sharks promptly and unharmed to the extent practicable, and CPCs are required to record and report discards and releases by status where possible. These measures reduce incentives for retention and constitute a management measure relevant to the UoA.

While the UoA has no observer coverage, hammerhead shark record shows a low UoA catches, it is considered that the direct effects of the UoA are highly likely to not hinder recovery of this species. **SG60 is met**. However, SG80 is not met due to the absence of observer coverage, lack of species-specific catch and fate information, and a lack of population estimates for this species from a stock assessment.

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

For the UoA fleet, indirect effects on ETP species might include disturbance of nesting/roosting behaviour, noise or pollution and removal of potential prey species. Note: Discard and post-release mortality is accounted for in the information cited above and is therefore not an indirect effect.

The team considered possible indirect effects on sharks and marine mammals to be as follows:

Elasmobranchs: Removal of prey – sharks are opportunistic feeders with a varied diet consisting of a range of teleosts including barracuda, jacks, dolphinfish, tuna, skipjack and other scombrids, white marlin, and squid, and occasionally stingrays, seabirds, turtles, marine gastropods, crustaceans, carrion from marine mammals, and garbage (Compagno, 1984 in Bonfil et al. (2008)). Although they are apex predators, the diversity of prey items makes it highly unlikely that the UoA fishery, through its exploitation of mainly albacore tuna, would lead to unacceptable impacts on any of the ETP shark species through competition. Overall, the team concludes it is highly unlikely that indirect effects from the UoA through prey removal are creating unacceptable impacts.

In summary, indirect effects have been considered and the fishery under assessment is considered highly likely to not create unacceptable impacts on the ETP species. **SG80 is met**. There has been no dedicated research exploring likely indirect effects by the UoA and as such, **SG100 is not met**.

Overall Performance Indicator (PI) Rationale

Draft scoring range	60 – 79
Information gap indicator	Information sufficient to score PI
Data-deficient? (Risk-Based Framework needed)	Yes

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 ≥	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 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	No
Rationale ICCAT Recommendation 04-10 requires that CPCs take measures to ensure fishers fully utilise any retained catches of sharks and that a 5% shark fin: carcass ratio is demonstrated for retained sharks. There is also a prohibition on vessels from retaining on board, transshipping, landing or trading any shark fins and fisheries not directed at sharks should have in place measure to encourage live release of sharks caught incidentally and are not used for food/subsistence. At the UoA level, Star Trading implements Shark and Sea Turtle Conservation Policy since 2024, including shark finning and bycatch mitigation measures. The company provided a signed declaration stating that shark lines are not used, and that monofilament branchlines and circle hooks are used, as well as other best practices to mitigate shark and sea turtle bycatch. Whilst there are measures set by ICCAT in place for elasmobranchs, the extent to which these are adopted and fully implanted by the fishery under assessment is not currently known due to the lack of observer data and paucity of logbook information. Suriname does not have any updates regarding observer programme lately. Further, there is no evidence that the fishery complies with the shark finning or Shark and Turtle Conservation Policy. Nor are these two policies considered to be a “strategy”. In conclusion, there are measures and strategy in international level for the protection of ETP species. However, without specific evidence to demonstrate national level of protection towards ETP species, it is not considered meeting SG80 and thus only SG60 is met.			

b	Management strategy in place (alternative)		
	Guide post	There are measures in place that are expected to ensure the UoA does not hinder the recovery of ETP species.	There is a comprehensive strategy in place that is expected to ensure the UoA does not hinder the recovery of ETP species.

	Met?	NA	NA	NA
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Rationale

Since there are requirements for protection and rebuilding provided through international agreements (ICCAT), the team has only scored scoring issue (a) following SA 3.11.2.1.

C	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 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	No	No

Rationale

Elasmobranchs

Appropriate handling and release methods, statistical reporting and gear requirements, as well as retention bans on selected species are key elements of ICCAT Recommendations to reduce impacts on ETP elasmobranchs. At the UoA level, gear requirements (set out under the Shark and Sea Turtle Conservation Policy) that include the use of circle hooks and monofilament line to reduce shark bycatch and not use “shark lines” or wire trace reflect best practice.

The currently available evidence is not comprehensive and considered likely to work based on general experience. The UoA fleet only contains logbook, which may have high uncertainty especially in discarded and ETP species.

SG80 is not met.

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

All ETP species (elasmobranchs)

Evidence for implementation of the measures or strategies for all ETP species includes logbook and the Shark and Sea Turtle Conservation Policy. The UoA fleet is using circle hooks, primarily fish bait and does not use shark lines or wire trace and has banned shark finning.

There is no evidence of retention of ETP species from logbook data through 2023 to 2025. **SG80 is met.** From the UoA logbook data it is highly uncertain if ETP interactions are underreported. This reduces confidence that the

measures and strategies for ETPs as determined by the ICCAT and Taiwan are achieving their objective as set out in Sla and Sib for all ETP species within the UoAs. **SG100 is not met.**

Review of alternative measures to minimize mortality of ETP species				
e	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	No	No

Rationale

ICCAT has an established Sub-Committee on Ecosystems (SC-ECO), which meets annually and provides a formal mechanism for reviewing bycatch issues, ETP species interactions, mitigation measures and the effectiveness of existing conservation and management measures. The work of SC-ECO includes reviewing catch, interaction, observer, logbook, port-sampling and compliance information submitted by CPCs, as well as considering scientific papers, datasets and technical documents relevant to bycatch mitigation in ICCAT fisheries. The outputs from SC-ECO meetings are used to provide scientific advice and recommendations to the SCRS and, subsequently, to the ICCAT Commission. This provides a regular review process through which ICCAT can evaluate whether existing ETP management measures remain appropriate or require strengthening.

An example of this process is provided in the 2020 SC-ECO report. During that meeting, SC-ECO reviewed recent collaborative research on seabird bycatch and the effectiveness of mitigation measures in pelagic longline fisheries operating in the South Atlantic and South Indian Oceans. The study presented in SCRS/2020/008 found that night setting was consistently associated with reduced seabird bycatch. It also found that the combined use of tori lines and night setting significantly reduced seabird interactions. SC-ECO considered that these results demonstrated that, when correctly applied, the combined use of tori lines and night setting can effectively reduce seabird bycatch across a range of fishing conditions and operational settings. The Sub-Committee therefore encouraged further collaborative work to expand the assessment of seabird bycatch and improve understanding of the effectiveness of mitigation measures.

This demonstrates that ICCAT has a functioning review mechanism for ETP species interactions and bycatch mitigation. The SC-ECO process allows new scientific information to be reviewed regularly, supports the evaluation of existing mitigation requirements, and provides a pathway for recommendations to be developed and considered by the SCRS and Commission.

At UoA level, Star Trading implements the Shark and Sea Turtle Conservation Policy, stipulating that all longline vessels shall only use circle hooks and monofilament line to reduce bycatch and support the best industry practices for bycatch handling and release. The company provided a signed declaration stating that shark lines are not used, and that monofilament branchlines and circle hooks are used.

There is some evidence showing measures being implemented as appropriate at regional level periodically. Therefore, **SG60 is met.**

Overall Performance Indicator (PI) Rationale

Draft scoring range

60 – 79

Information gap indicator	Information sufficient to score PI
Data-deficient? (Risk-Based Framework needed)	No

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:		
Scoring Issue		SG 60	SG ≥	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 If RBF is used to score PI 2.3.1 for the UoA: Qualitative information is adequate to estimate productivity and susceptibility attributes for ETP species.	Some quantitative information is adequate to assess the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species. OR If RBF is used to score PI 2.3.1 for the UoA: Some quantitative information is adequate to assess productivity and susceptibility attributes for ETP species.	Quantitative information is available to assess with a high degree of certainty the magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status of ETP species.
	Met?	No	No	No
Rationale				
At the regional level, there is sufficient information about ETP species and there is also arguably quantitative information about some ETP stocks/populations that interact with this type of fishery under assessment. For some of the ETP species assessed here post release mortality estimates are available and can be applied, while in cases where information is lacking a mortality profile can be applied to assess risk. Restrepo et al (2024) indicates longline fisheries should be scored under 80 due to insufficient observer coverage and lack of detailed logbook information was often cited, followed by species-specific gaps for turtles, seabirds and sharks. Similar in this fishery particularly, without more specific information from the UoA, it is not possible to infer risk from the qualitative information available on ETP interactions with Atlantic tuna fisheries more generally, thus making it difficult to justify meeting SG60 with the information available for this pre-assessment; SG60 is not met.				
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, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty

				whether a strategy is achieving its objectives.
	Met?	No	No	No

Rationale

The UoA observer coverage does not exist. Whilst similar fisheries indicate that there is some information to justify the impacts of management strategies towards ETP species, particularly elasmobranchs, there is no fishery-specific observer data that can validate the full implementation of the management measures required by ICCAT. In this UoA, observer data has not been acquired for this pre-assessment and, therefore, no information to measure trends in ETP bycatch rates and support a strategy to manage impacts on ETP species. Thus, **SG60 is not met**.

Overall Performance Indicator (PI) Rationale

Draft scoring range	< 60
Information gap indicator	Information sufficient to score PI
Data-deficient? (Risk-Based Framework needed)	No

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