



MarinTrust Standard V2

By-product Fishery Assessment

Skipjack Tuna in FAO Areas 51 and 57

MarinTrust Programme

Unit C, Printworks

22 Amelia Street

London

SE17 3BZ

E: standards@marin-trust.com

T: +44 2039 780 819

Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Skipjack tuna (<i>Katsuwonus Pelamis</i>)
	Geographical area:	Atlantic Ocean, FAO Major Fishing Area 41 (Southwest Atlantic) and 47 (Southeast Atlantic)
	Country of origin of the product:	El Salvador, Ecuador, Panama, Spain
	Stock:	Atlantic Western and Eastern stocks
Date	June, 2024	
Report Code	SLV09	
Assessor	Jose Peiro Crespo	
Country of origin of the product - PASS	El Salvador, Ecuador, Panama, Spain	
Country of origin of the product - FAIL	None	

Application details and summary of the assessment outcome			
Company Name(s): Calvo Conservas El Salvador SA de CV			
Country: El Salvador			
Email address:		Applicant Code:	
Certification Body Details			
Name of Certification Body:		LRQA	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Jose Peiro Crespo	Sam Peacock	0.5	Surveillance 2
Assessment Period	Up to June 2024		

Scope Details	
Main Species	Skipjack tuna (<i>Katsuwonus pelamis</i>)
Stock	Indian Ocean skipjack tuna
Fishery Location	FAO 51 & 57 Indian Ocean, Western and Eastern
Management Authority (Country/ State)	Indian Ocean Tuna Commission (IOTC)
Gear Type(s)	Longlines and purse seines
Outcome of Assessment	
Peer Review Evaluation	Agree with assessment outcome
Recommendation	Pass

Table 2. Assessment Determination

Assessment Determination
<p>Skipjack tuna (<i>Katsuwonus pelamis</i>) meets the eligibility criteria for approval as Marin Trust by-product raw material, as it is not categorized as Endangered or Critically Endangered on the Union for Conservation of Nature's Red List (IUCN) and it does not appear in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) appendices.</p> <p>For the purpose of assessment and management, a singular stock of skipjack tuna is found in the Indian Ocean. The stock is managed by the Indian Ocean Tuna Commission (IOTC) relative to target and limit reference points, and therefore it is assessed under category C. The stock was last assessed in 2023. Fishery removals of the species in the fishery were considered during the stock assessment process. According to that stock assessment, the biomass of the skipjack tuna stock in the Indian Ocean is considered to be significantly higher than the target and limit reference point (70% of probability of being in the green quadrant of the Kobe plot). As a result, the fishery effectively complies with clauses C1.1 and C1.2.</p> <p>Consequently, skipjack tuna (<i>Katsuwonus pelamis</i>) caught in FAO areas 51 and 57 is granted approval for the production of fishmeal and fish oil, adhering to the existing MarinTrust v2.3 by-products standard.</p>
Fishery Assessment Peer Review Comments
<p>The peer reviewer agrees that this species is eligible for assessment under the MarinTrust byproduct assessment methodology, and that the stock falls into Category C. The most recent stock assessment was adequate to meet the requirements of C1.1, and it is currently estimated to be highly likely that biomass is above the target reference point level, meeting the requirements of C1.2. Overall, the peer reviewer agrees that this stock should be approved as a source of byproduct raw material for MarinTrust certified facilities.</p>
Notes for On-site Auditor

Species Categorisation

NB: If any species is categorised as Endangered or Critically Endangered on the IUCN Red List, or if it appears in CITES Appendix 1, it **cannot** be approved for use as a MarinTrust raw material.

IUCN Red list Category

By-product material from a species listed by IUCN (the International Union for Conservation of Nature) under the Red List for the following categories shall immediately fail the assessment;

- EXTINCT (E) AND EXTINCT IN THE WILD (EW)
- CRITICALLY ENDANGERED (CR) facing an extremely high risk of extinction in the wild.
- ENDANGERED (EN) facing a very high risk of extinction in the wild.

By-product material may be used from the following categories provided that all clauses in the MarinTrust standard are passed.

- VULNERABLE (VU) facing a high risk of extinction in the wild.
- NEAR THREATENED (NT) does not qualify for above now, but is close or is likely to qualify for, a threatened category in the near future.
- LEAST CONCERN (LC) Widespread and abundant.
- DATA DEFICIENT (DD) and NOT EVALUATED (NE)

Table 3 Species Categorisation Table

Common name	Latin name	Stock	Management	Category	IUCN Red List Category ¹	CITES Appendix 1 ²
Skipjack tuna	<i>Katsuwonus pelamis</i>	Skipjack tuna	IOTC	C	Least concern ³	No

¹ <https://www.iucnredlist.org/>

² <https://cites.org/eng/app/appendices.php>

³ <https://www.iucnredlist.org/species/170310/46644566>

CATEGORY C SPECIES

In a by-product assessment, Category C species are those which are subject to a species-specific management regime and are usually targeted species in fisheries for human consumption.

Clause C1 should be completed for each Category C species. If there are no Category C species in the fishery under assessment, this section can be deleted. Where a species fails this Clause, it should be assessed as a Category D species instead.

Species Name		Skipjack tuna (<i>Katsuwonus pelamis</i>)	
C1	Category C Stock Status - Minimum Requirements		
	C1.1	Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.	Yes
	C1.2	The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.	Yes
Clause outcome:			Pass

C1.1 Fishery removals of the species in the fishery under assessment are included in the stock assessment process, OR are considered by scientific authorities to be negligible.

In the most recent assessment conducted in 2023, fisheries removals of the species were considered.

Main fisheries (mean annual catch 2018-2022): skipjack tuna are caught using purse seine (54.4%), followed by baitboat (19.2%) and gillnet (17.9%). The remaining catches taken with other gears contributed to 8.6% of the total catches in recent years. Although pole-and-line, purse seine, and gillnet catches had been on a declining trend since the mid-2000s, there has been an upward trajectory since 2012, particularly for purse seine

Main fleets (mean annual catch 2018-2022): the majority of skipjack tuna catches are attributed to vessels flagged to Indonesia (19.6%) followed by Maldives (17.6%) and EU (Spain) (16.9%). The 31 other fleets catching skipjack tuna contributed to 45.8% of the total catch in recent years.

Fishery removals are considered in the assessment process, **C1.1. is met.**

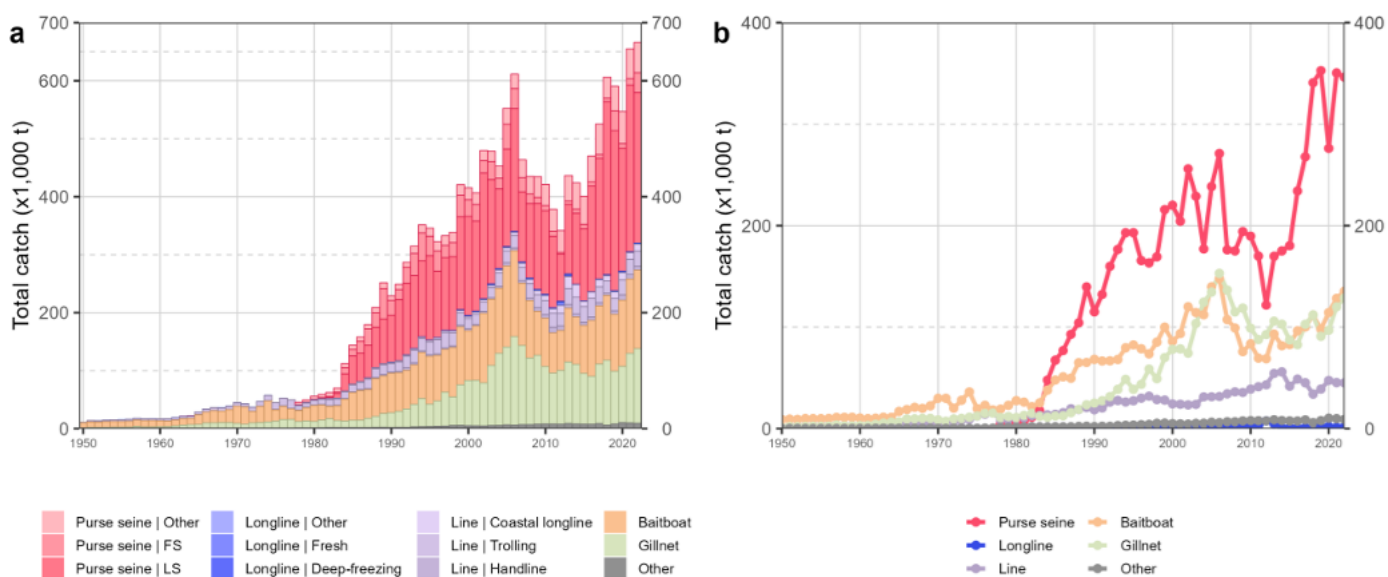


FIGURE 1 ANNUAL TIME SERIES OF (A) CUMULATIVE NOMINAL CATCHES (METRIC TONNES; T) BY FISHERY AND (B) INDIVIDUAL NOMINAL CATCHES (METRIC TONNES; T) BY FISHERY GROUP FOR SKIPJACK TUNA DURING 1950-2022. FS = FREE-SWIMMING

SCHOOL; LS = SCHOOL ASSOCIATED WITH DRIFTING FLOATING OBJECTS. PURSE SEINE | OTHER: COASTAL PURSE SEINE, PURSE SEINE OF UNKNOWN ASSOCIATION TYPE, RING NET; LONGLINE | OTHER: SWORDFISH AND SHARKS-TARGETED LONGLINES; OTHER: ALL REMAINING FISHING GEARS (IOTC 2023).

C1.2 The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy), OR removals by the fishery under assessment are considered by scientific authorities to be negligible.

For this stock the limit reference point (Interim limit reference points) and target reference point (interim limit and target reference points) are $0.2 \cdot SSB_0$ and $F_{0.2SSB_0}$ and $0.4 \cdot SSB_0$ and $F_{0.4SSB_0}$ respectively (Resolutions 21/03 and 15/10). The most recent stock assessment indicated that the value of SSB_{2022}/SSB_0 is 0.53, which is above both the SSB target and limit. The 2023 stock assessment concluded that the stock biomass was above SB_{MSY} and the fishing mortality remains below F_{MSY} with a probability of 98.4 % ; and that “over the history of the fishery, biomass has been well above the adopted limit reference point ($0.2 \cdot SB_0$)” (70% of probability of being in the green quadrant of the Kobe plot) (IOTC 2023), **C1.2 is met.**

TABLE 1. PROBABILITY OF STOCK STATUS WITH RESPECT TO EACH OF FOUR QUADRANTS OF THE KOBE PLOT. PERCENTAGES ARE CALCULATED AS THE PROPORTION OF MODEL TERMINAL VALUES THAT FALL WITHIN EACH QUADRANT WITH MODEL WEIGHTS TAKEN INTO ACCOUNT (IOTC 2023)

	Stock overfished ($SB_{2022} / SB_{40\%SB_0} < 1$)	Stock not overfished ($SB_{2022} / SB_{40\%SB_0} \geq 1$)
Stock subject to overfishing ($F_{2022} / F_{40\%SB_0} \geq 1$)	8%	21%
Stock not subject to overfishing ($F_{2022} / F_{40\%SB_0} \leq 1$)	1%	70%
Not assessed / Uncertain / Unknown		

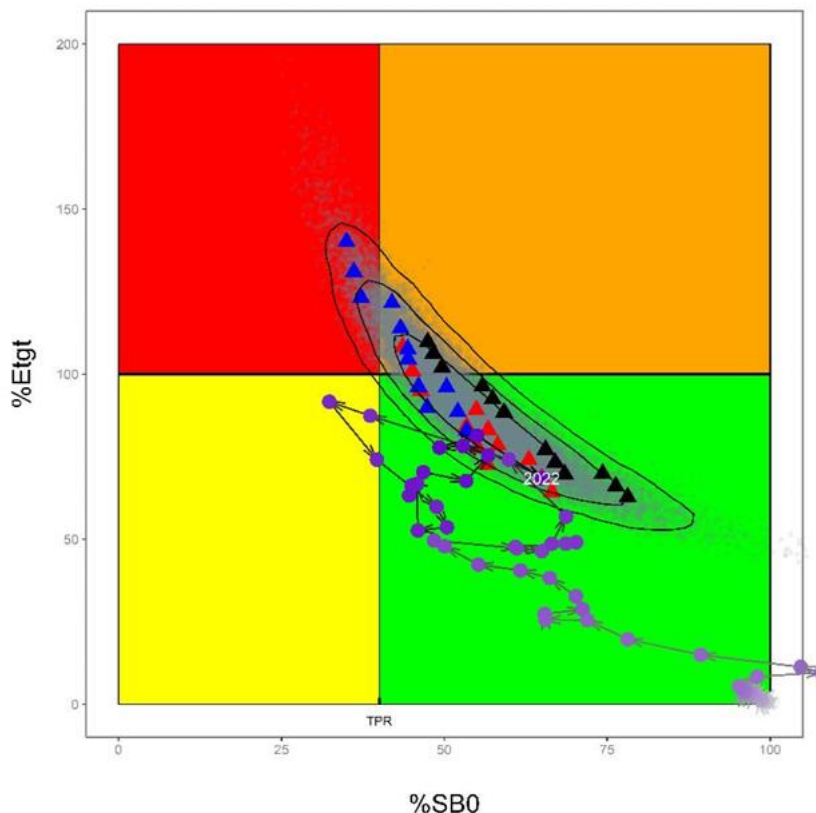


FIGURE 2S. KIPJACK TUNA: SS3 AGGREGATED INDIAN OCEAN ASSESSMENT KOBE PLOT OF THE 2023 UNCERTAINTY GRID. LEFT - CURRENT STOCK STATUS, RELATIVE TO SB_0 AND F (X-AXIS) AND $F_{40\%B_0}$ (Y-AXIS) REFERENCE POINTS FOR THE FINAL MODEL GRID.. TPR INDICATES 40% B0; TRIANGLES REPRESENT MPD ESTIMATES FROM INDIVIDUAL MODELS (BLACK, MODELS BASED ON PL INDEX; RED, MODELS BASED ON PSLs INDEX; BLUE, MODELS BASED ON AND BOTH PSLs AND ABBI INDEX). GREY DOTS REPRESENT UNCERTAINTY FROM INDIVIDUAL MODELS. THE ARROWED LINE REPRESENTS TIME SERIES OF HISTORICAL STOCK TRAJECTORY FOR MODEL PSLs. CONTOURS REPRESENTS 50, 80, AND 90% CONFIDENCE REGION (IOTC 2023)

Figure 2. Indian Ocean skipjack tuna, aggregated assessment Kobe plot for the 2020 stock assessment. Symbols and grey dots represent the range of outcomes of the various models. The vertical dashed line indicates the limit reference point – note that no outcomes indicate the stock biomass is below this level (IOTC 2020)

The summary or the stock status is shown in the table below:

TABLE 2 STATUS OF SKIPJACK TUNA (KATSUWONUS PELAMIS) IN THE INDIAN OCEAN (IOTC 2023)

Area ¹	Indicators		2023 stock status determination ³
Indian Ocean	Catch 2022 ² (t)	666,408	70%*
	Mean annual catch 2018-2022 (t)	613,061	
	E _{40%SB0} ⁴ (80% CI)	0.55 (0.48–0.65)	
	SB ₀ (t) (80% CI)	2 177 144 (1 869 035–2 465 671)	
	SB ₂₀₂₂ (t) (80% CI)	1 142 919 (842 723–1 461 772)	
	SB ₂₀₂₂ / SB ₀ 80% CI)	0.53 (0.42–0.68)	
	SB ₂₀₂₂ / SB _{40%SB0} (80% CI)	1.33 (1.04–1.71)	
	SB ₂₀₂₂ / SB _{20%SB0} (80% CI)	2.67 (2.08–3.42)	
	SB ₂₀₂₂ / SB _{MSY} (80% CI)	2.30 (1.57–3.40)	
	F ₂₀₂₂ / F _{MSY} (80% CI)	0.49 (0.32–0.75)	
F ₂₀₂₂ / F _{40%SSB0} (80% CI)	0.90 (0.68–1.22)		
MSY (t) (80% CI)	584 774 (512 228–686 071)		

¹Boundaries for the Indian Ocean stock assessment are defined as the IOTC area of competence

² Proportion of 2022 catch fully or partially estimated by IOTC Secretariat: 18.1%

³2022 is the final year that data were available for this assessment.

⁴ E_{40%SB0} is the equilibrium annual exploitation rate (E_{targ}) associated with the stock at B_{targ}, and is a key control parameter in the skipjack harvest control rule as stipulated in Resolution 21/03. Note that Resolution 23/03 did not specify the exploitation rate associated with the stock at B_{lim}

*Estimated probability that the stock is in the respective quadrant of the Kobe plot (defined in resolution 21/03 and shown below), derived from the confidence intervals associated with the current stock status

References

IOTC (2023). APPENDIX 3 EXECUTIVE SUMMARY: SKIPJACK TUNA (2023). Available at: <https://iotc.org/node/3379>

Links

MarinTrust Standard clause	1.3.2.2
FAO CCRF	7.5.3
GSSI	D.3.04, D5.01

CATEGORY D SPECIES

Category D species are those which are not subject to a species-specific management regime. In the case of mixed trawl fisheries, Category D species may make up the majority of landings. The comparative lack of scientific information on the status of the population of the species means that a risk-assessment style approach must be taken.

D1	Species Name	NA	
	Productivity Attribute	Value	Score
	Average age at maturity (years)		
	Average maximum age (years)		
	Fecundity (eggs/spawning)		
	Average maximum size (cm)		
	Average size at maturity (cm)		
	Reproductive strategy		
	Mean trophic level		
	Average Productivity Score		
	Susceptibility Attribute	Value	Score
	Availability (area overlap)		
	Encounterability (the position of the stock/species within the water column relative to the fishing gear)		
	Selectivity of gear type		
	Post-capture mortality		
	Average Susceptibility Score		
	PSA Risk Rating (From Table D3)		
	Compliance rating		
	Further justification for susceptibility scoring (where relevant)		
	<i>For susceptibility attributes, please provide a brief rationale for scoring of parameters where there may be uncertainty affecting your decision</i>		
References			
<i>Standard clauses 1.3.2.2</i>			

Table D2 - Productivity / Susceptibility attributes and scores.

Productivity attributes	High productivity (Low risk, score = 1)	Medium productivity (medium risk, score = 2)	Low productivity (high risk, score = 3)
Average age at maturity	<5 years	5-15 years	>15 years
Average maximum age	<10 years	10-25 years	>25 years
Fecundity	>20,000 eggs per year	100-20,000 eggs per year	<100 eggs per year
Average maximum size	<100 cm	100-300 cm	>300 cm
Average size at maturity	<40 cm	40-200 cm	>200 cm
Reproductive strategy	Broadcast spawner	Demersal egg layer	Live bearer
Mean Trophic Level	<2.75	2.75-3.25	>3.25

Susceptibility attributes	Low susceptibility (Low risk, score = 1)	Medium susceptibility (medium risk, score = 2)	High susceptibility (high risk, score = 3)
Areal overlap (availability) Overlap of the fishing effort with the species range	<10% overlap	10-30% overlap	>30% overlap
Encounterability The position of the stock/species within the water column relative to the fishing gear, and the position of the stock/species within the habitat relative to the position of the gear	Low overlap with fishing gear (low encounterability).	Medium overlap with fishing gear.	High overlap with fishing gear (high encounterability). Default score for target species
Selectivity of gear type Potential of the gear to retain species	a Individuals < size at maturity are rarely caught	a Individuals < size at maturity are regularly caught.	a Individuals < size at maturity are frequently caught
	b Individuals < size at maturity can escape or avoid gear.	b Individuals < half the size at maturity can escape or avoid gear.	b Individuals < half the size at maturity are retained by gear.
Post-capture mortality (PCM) The chance that, if captured, a species would be released and that it would be in a condition permitting subsequent survival	Evidence of majority released post-capture and survival.	Evidence of some released post-capture and survival.	Retained species or majority dead when released.

D3	Average Susceptibility Score		
	1 - 1.75	1.76 - 2.24	2.25 - 3
Average Productivity Score	1 - 1.75	PASS	PASS
	1.76 - 2.24	PASS	PASS
			TABLE D4

	2.25 - 3	PASS	TABLE D4	TABLE D4
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D4	Species Name		
	Impacts On Species Categorised as Vulnerable by D1-D3 - Minimum Requirements		
	D4.1	The potential impacts of the fishery on this species are considered during the management process, and reasonable measures are taken to minimise these impacts.	
D4.2	There is no substantial evidence that the fishery has a significant negative impact on the species.		
Outcome:			
Evidence			
D4.1: The potential impacts of the fishery on this species are considered during the management process, and reasonable measures are taken to minimise these impacts.			
D4.2 There is no substantial evidence that the fishery has a significant negative impact on the species.			
References			
Links			
MarinTrust Standard clause		1.3.2.2, 4.1.4	
FAO CCRF		7.5.1	
GSSI		D.5.01	