MarinTrust Standard V2

By-product Fishery Assessment
USA20 - Bigeye Tuna, FAO 41 & 47 (Atlantic Bigeye)

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Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Bigeye Tuna (*Thunnus obesus*)
	Geographical area:	FAO 41, 47
	Country of origin of the product:	Seychelles, South Africa
	Stock:	Atlantic Bigeye tuna
Date	June 2024	
Report Code	USA20	
Assessor	Vineetha Aravind	
Country of origin of the product - PASS	Seychelles, South Africa	
Country of origin of the product - FAIL	n/a	

Application details and summary of the assessment outcome			
Company Name(s): Indian Ocean Tuna Ltd.			
Country: USA			
Email address:		Applicant Code:	
Certification Body Details			
Name of Certification Body:		LRQA	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Vineetha Aravind	Sam Peacock	0.2	Surveillance 1
Assessment Period	June 2024 – June 2025		

Scope Details	
Main Species	Bigeye Tuna (*Thunnus obesus*)
Stock	Atlantic Bigeye tuna
Fishery Location	FAO 41, 47
Management Authority (Country/ State)	International Commission for the Conservation of Atlantic Tuna (ICCAT)
Gear Type(s)	Purse seine, Longline, baitboat
Outcome of Assessment	
Peer Review Evaluation	Agree with assessment outcome
Recommendation	PASS

Table 2. Assessment Determination

Assessment Determination
To be approved as Marin Trust raw material, the species should not appear as Endangered or Critically Endangered in the IUCN Red list and should not appear in CITES appendices. Bigeye in the Atlantic appear as vulnerable in the IUCN Red List, it does not appear in CITES appendices; therefore, it is eligible for approval for use as Marin Trust by-product raw material. The latest stock assessment for Bigeye was in 2021. The stock assessment used fishery data from the period 1950-2019 and indices of relative abundance used in the assessment were calculated through 2019. All available catch information is used in the assessment and the stock is found to be slightly below BMSY. No limit reference point (LRP) is specified for the stock, but considering the default LRP of ½ BMSY as defined by MT byproduct assessment guidelines, the biomass is likely to be above LRP. Bigeye tuna is managed by international and state regulations and therefore, it is scored against Category C.

Fishery Assessment Peer Review Comments
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. Biomass is currently estimated to be below the target reference point level, but highly likely to be above the limit reference point, thus 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.

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 an 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]
Bigeye tuna	*Thunnus obesus*	Atlantic Bigeye Tuna	Yes	C	Vulnerable[3]	No

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[1] https://www.iucnredlist.org/
[2] https://cites.org/eng/app/appendices.php
[3] https://www.iucnredlist.org/species/21859/46912402

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		Bigeye	
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.	PASS
	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.	PASS
		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.

The most recent stock assessment for Atlantic bigeye was in 2021 by ICCAT using all available catch data and several modelling approaches (ICCAT 2021). The stock assessment used fishery data from the period 1950-2019 and indices of relative abundance used in the assessment were calculated through 2019. Different model formulations were used to test different potential representations of stock dynamics and characteristics to reduce uncertainties in the outcomes. Catch data are available by area, gear, and vessel flag, and were incorporated into the assessment. C1.1 is met.
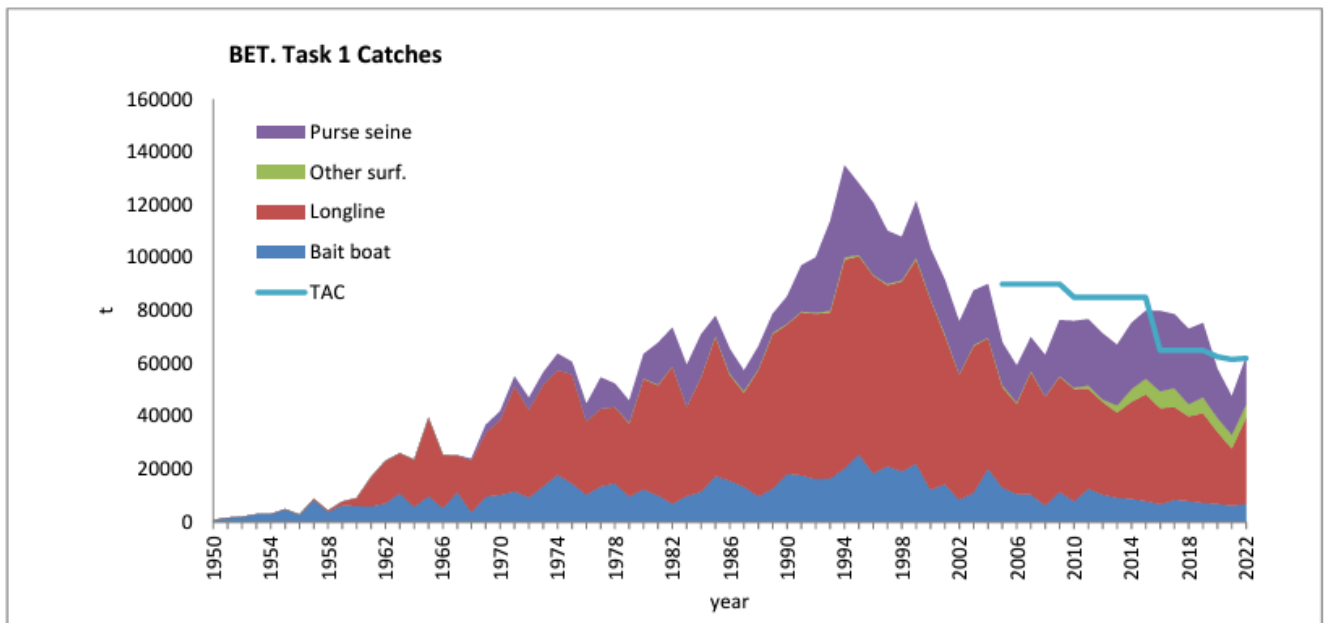

Figure 1: Bigeye tuna estimated and reported catches for all the Atlantic stock (t).

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.

The stock assessment for bigeye tuns in 2021 estimated stock status in 2019. A relative spawning biomass (SSB_{2019}/SSB_{MSY}) of 0.94, was estimated with a 96% confidence interval of 0.71 – 1.37. This indicates that the stock is overfished and biomass is likely

to be below the target reference point. At the same time, the stock assessment assures that, as of 2019 the stock was not subject to overfishing.

Limit reference point is not defined for the stock. Therefore, an LRP of ½ MSY is assumed as per the MT byproduct assessment guidance. The 95% confidence interval described above indicates that there is a very high probability the stock biomass is at least 0.71 BMSY, and therefore is very likely to be above the default limit reference point. For this reason, C1.2 is met.
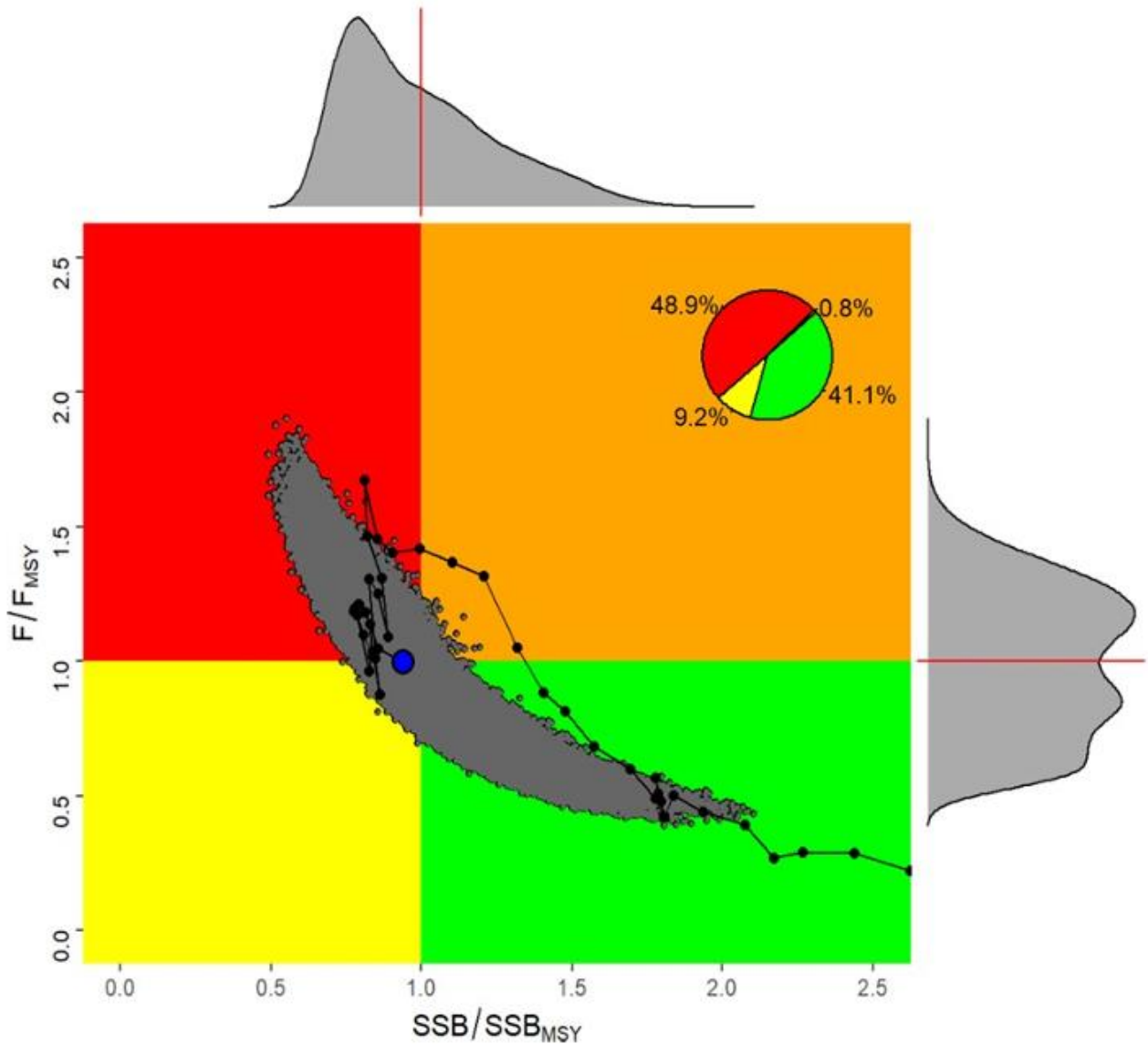

Figure 2: Kobe plot of SSB/SSBMSY and F/FMSY for stock status of Atlantic bigeye tuna in 2019 based on the log multivariate normal approximation across the 27 uncertainty grid model runs of Stock Synthesis with an insert pie chart showing the probability of being in the red quadrant (48.9%), green quadrant (41.1 %), orange (0.8%) and in yellow (9.2 %). Blue circle is the median and marginal histograms represent distribution of either SSB/SSBMSY or F/FMSY.

References

ICCAT (2021). Stock assessment executive summary, bigeye tuna.
https://www.iccat.int/Documents/SCRS/ExecSum/BET_ENG.pdf

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) *For susceptibility attributes, please provide a brief rationale for scoring of parameters where there may be uncertainty affecting your decision*			
References			
Standard clauses 1.3.2.2			

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	PASS
	1.76 - 2.24	PASS	PASS	TABLE D4
	2.25 - 3	PASS	TABLE D4	TABLE D4

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

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