MarinTrust Standard V2

By-product Fishery Assessment Report Template

MarinTrust Programme
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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 Area 34 Atlantic Eastern Central
	Country of origin of the product:	USA (Flag Country: Ghana)
	Stock:	Atlantic bigeye tuna
Date	23/09/2021	
Report Code	BP192	
Assessor	Virginia Polonio	
Country of origin of the product - PASS	USA (Flag Country: Ghana)	
Country of origin of the product - FAIL	NA	

Application details and summary of the assessment outcome			
Name:			
Address:			
Country: USA		Zip:	
Tel. No.:		Fax. No.:	
Email address:		Applicant Code:	
Key Contact:		Title:	
Certification Body Details			
Name of Certification Body:		Global Trust Certification	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Virginia Polonio	Geraldine Criquet	0.5	Initial
Assessment Period	To September 2021		

Scope Details	
Main Species	Bigeye tuna, *Thunnus obesus*
Stock	Atlantic bigeye tuna
Fishery Location	USA (Flag Country: Ghana)
Management Authority (Country/ State)	FAO 34 Atlantic Eastern Central
Gear Type(s)	Purse seines, longlines and bait boat
Peer Review Evaluation	Agree with the assessor's recommendation of approval.
Recommendation	**APPROVED**

Table 2. Assessment Determination

Assessment Determination
If any species is categorised as Endangered or Critically Endangered on IUCN's Red List, or if it appears in the CITES appendices, it cannot be approved for use as Marin Trust raw material. Bigeye tuna, *Thunnus obesus* does not appear as Endangered or Critically Endangered on IUCN's Red List, nor does it appear in CITES appendices, therefore Bigeye tuna, (*Thunnus obesus*) is eligible for approval for use as Marin Trust by-product raw material. At this point in time it is assumed there is a single Atlantic-wide population of bigeye tuna. This is based on a lack of identified genetic heterogeneity, time/area distribution of fish and movement patterns of tagged fish, therefore, the Atlantic stock is considered in this report. The fishing mortality rate which, if applied constantly, would result in Maximum Sustainable Yield (MSY). ICCAT uses two reference points to determine the status of bigeye tuna populations in the Atlantic, Bcurrent/BMSY and Fcurrent/FMSY Therefore, the stock is subject to specific management regime and reference points are available to define the stock status relative to. Therefore, it was assessed under Category C. Removals of the species are considered in the stock assessment and the stock **PASSES** clauses C1.1. However, The most recent assessment (2019) indicates that the stock status determination is that the stock is overfished, and overfishing is happening, and it **FAILS** clauses C1.2. As per guidance the stock has been also assessed under category D. With an average productivity of 1.85 and susceptibility of 1.75, the stock passes the PSA and therefore it meets the criteria for category D. Therefore, Bigeye tuna, *Thunnus obesus* in FAO 34 Atlantic Eastern Central is **APPROVED** by the assessor for the production of fishmeal and fish oil under the current Marin Trust v 2.0 by-products standard.
Fishery Assessment Peer Review Comments
The assessor correctly classified the Atlantic bigeye tuna stock as category C, reference points or proxies are defined to assess status of the stock relative to. Fishery removals are included in the stock assessment process so the stock PASSES Clause C1.1. The Atlantic bigeye tuna stock is considered, in its most recent stock assessment, to have a biomass below the limit reference point or proxies, it FAILS Clause C1.2. The assessor further assesses the stock under Category D according to the Marin Trust guidance. With an average productivity of 1.85 and susceptibility of 1.75, the stock passes the PSA and therefore it meets the criteria for category D. Therefore, the Atlantic bigeye tuna stock should be approved.
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 Redlist 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	International Commission for the Conservation of Atlantic Tunas (ICCAT)	C	VU	No

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

CATEGORY C SPECIES

In a whole fish assessment, Category C species are those which make up less than 5% of landings, but which are subject to a species-specific management regime. In most cases this will be because they are a commercial target in a fishery other than the one under assessment.

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 tuna, *Thunnus obesus***	
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.	No
	Clause outcome:	**FAILS**

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 last stock assessment for bigeye tuna was conducted in 2018 (Anon. 2018b) through a process that included a data preparatory meeting in April and an assessment meeting in July. The stock assessment used fishery data from the period 1950-2017 and all indices of relative abundance used in the assessment were constructed through 2017. (Figure 1).

The reported catches by Ghana in the last five years were as follows:

Year	Catches (tonnes)
2014	4,175
2015	5,918
2016	5,194
2017	3,838
2018	3,571

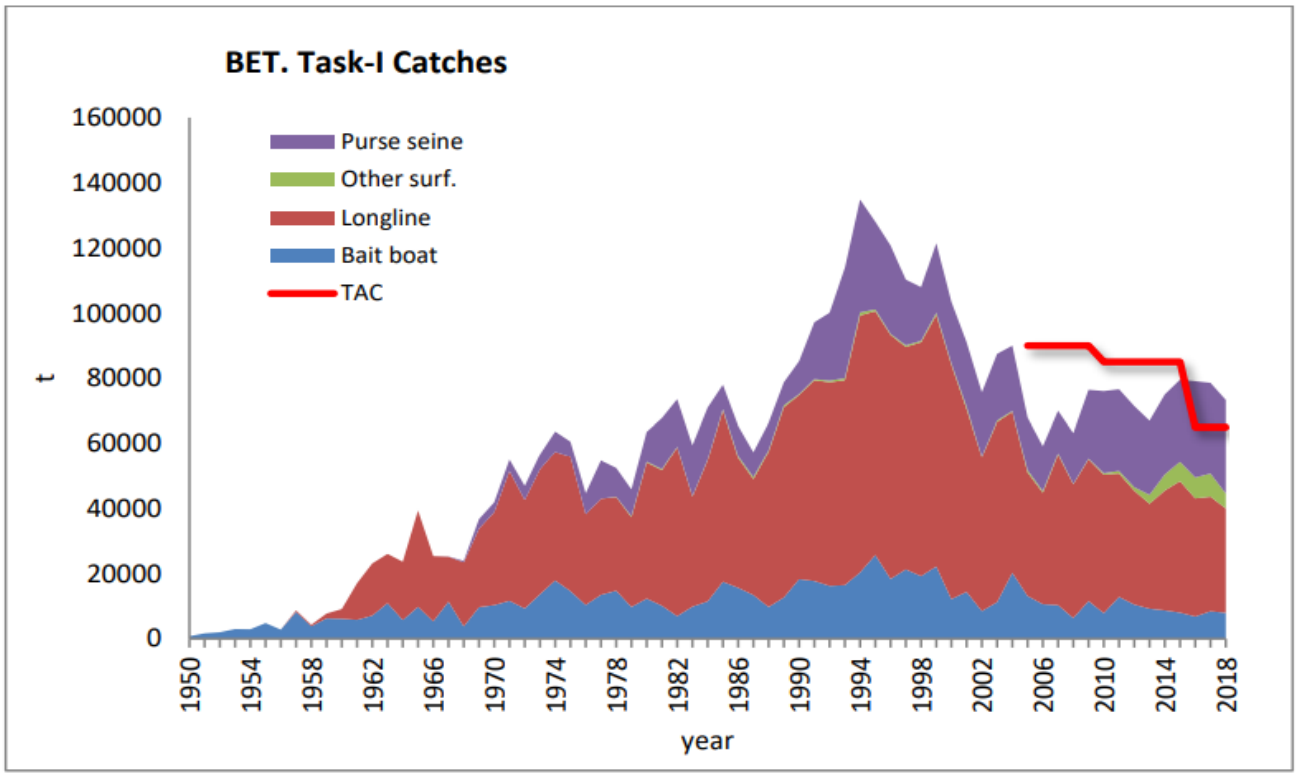

Figure 1. Bigeye estimated and reported catches for all the Atlantic stock (t). The value for 2018 represents preliminary estimates because some countries have yet to provide data for this year or are under revision. ICAAT 2019

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 2018 stock assessment was conducted using similar assessment models to those used in 2015 but updating data and new relative abundance indices up to 2017. The Atlantic bigeye tuna stock in 2017 was estimated to be overfished and that overfishing was occurring. Maintaining the catches at 2016-2018 levels in the future (around 77,000 t and about 20% greater than the 65,000 TAC), will reduce the probability of achieving Convention objectives by 2033 (B>BMSY, FRelative)

In the last stock assessment Spawning Biomass (SSB2017/SSBMSY) was set at 0.59 (0.42-0.80). Therefore, as shown in the kobe plot below the stock is below limits and catches from Ghana are not negligible.

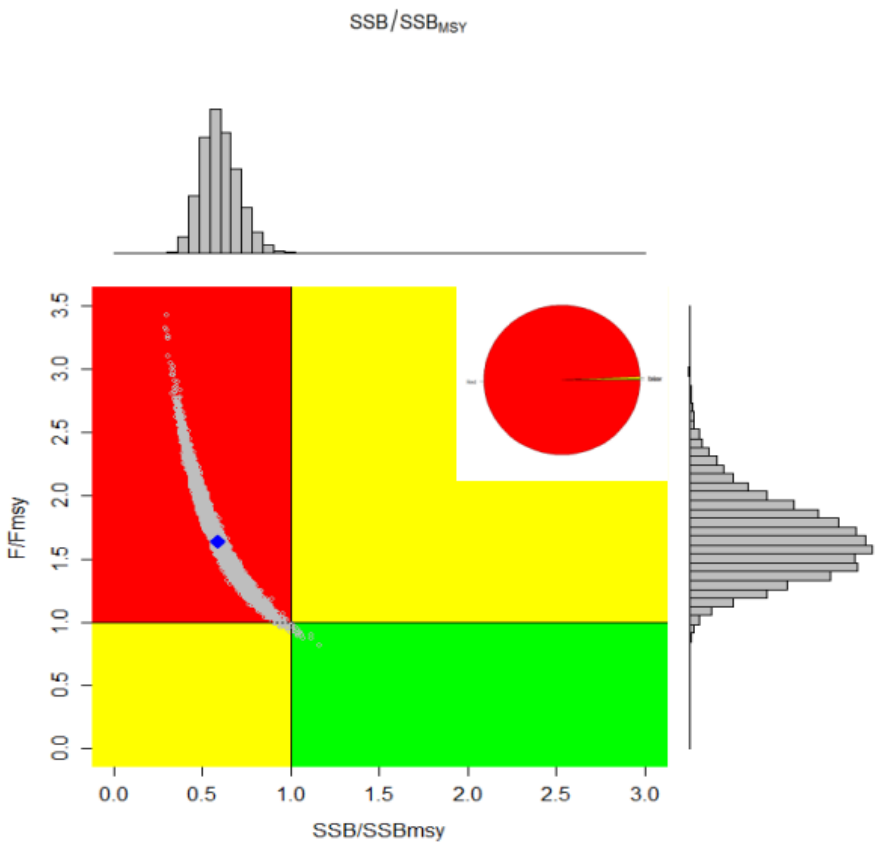

Figure 2. Kobe plot of SSB/SSBMSY and F/FMSY for stock status of Atlantic bigeye tuna in 2017 based on the log multivariate normal approximation across the 18 uncertainty grid model runs of Stock Synthesis with an insert pie chart showing the probability of being in the red quadrant (99.5 %), green quadrant (0.2 %), and in yellow (0.3 %). Blue square is the median and marginal histograms represent distribution of either SSB/SSBMSY or F/FMS

Therefore, the species is considered, in its most recent stock assessment, to have a biomass below the limit reference point (or proxy and removals are not negligible, consequently, the stock **FAILS** clause C1.2

References

ICAAT 2018. REPORT OF THE 2018 ICCAT BIGEYE TUNA STOCK ASSESSMENT MEETING (Pasaia, Spain 16-20 July 2018) https://www.iccat.int/en/assess.html

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 make up less than 5% of landings and 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	Bigeye tuna, *Thunnus obesus*	
	Productivity Attribute	**Value**	**Score**
	Average age at maturity (years)	2.3	2
	Average maximum age (years)	11.6	1
	Fecundity (eggs/spawning)	4,274,342 [2,900,000-6,300,000]	1
	Average maximum size (cm)	250	3
	Average size at maturity (cm)	97.4	2
	Reproductive strategy	Non-guarders: open water/substratum egg scatterers	1
	Mean trophic level	4.5	3
		Average Productivity Score	**1.85**
	Susceptibility Attribute	**Value**	**Score**
	Overlap of adult species range with fishery	No information	-
	Distribution	Throughout region / global distribution*	1
	Habitat	Epi-pelagic in neritic waters	Not used
	Depth range	0-200m	1
	Selectivity	Mesh size 2.5-9cm approx	3
	Post-capture mortality	Retained Short tows	2
		Average Susceptibility Score	**1.75**
		PSA Risk Rating (From Table D3)	**PASS**
		Compliance rating	**PASS**

References

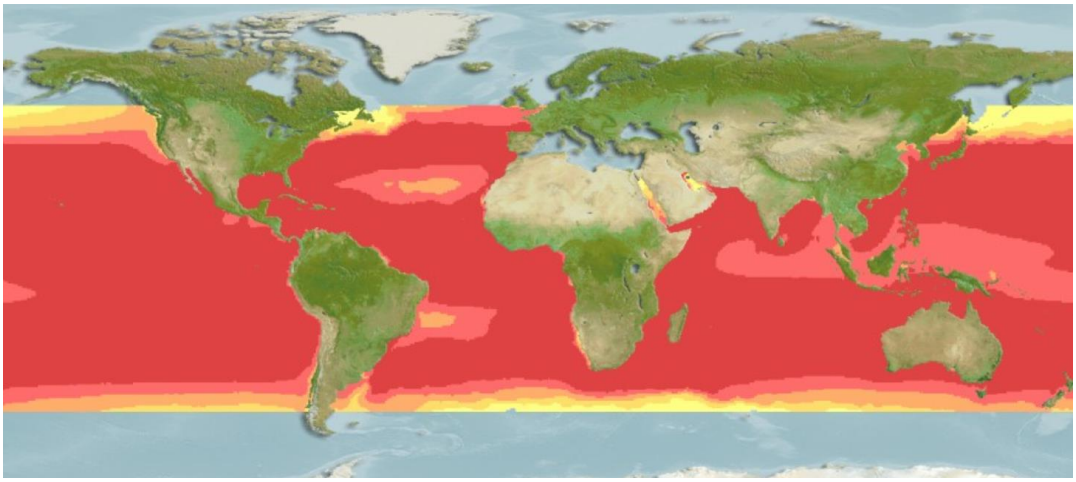

Figure 3. Distribution maps for *Thunnus obesus* (Bigeye tuna), with modelled year 2050 native range map based on IPCC RCP8.5 emissions scenario.

Scarponi, P., G. Coro, and P. Pagano. A collection of Aquamaps native layers in NetCDF format. Data in brief 17 (2018): 292-296.

https://www.fishbase.se/Summary/SpeciesSummary.php?ID=146&AT=bigeye

Standard clauses 1.3.2.2

Table D2 - Productivity / Susceptibility attributes and scores.

Productivity attributes	Low productivity/ High risk	Medium productivity/ Medium risk	High productivity/ Low risk
	Score 3	Score 2	Score 1
Average age at maturity (years)	>4	2 to 4	<2
Average maximum age (years)	>30	10 to 30	<10
Fecundity (eggs/spawning)	<1 000	1 000 to 10 000	>10 000
Average maximum size (cm)	>150	60 to 150	<60
Average size at maturity (cm)	>150	30 to 150	<30
Reproductive strategy	Live bearer, mouth brooder or significant parental investment	Demersal spawner "berried"	Broadcast spawner
Mean trophic level	>3.25	2.5–3.25	<2.5

Susceptibility attributes		High susceptibility/ High risk	Medium susceptibility/ Medium risk	Low susceptibility/ Low risk
		Score 3	Score 2	Score 1
Availability	1) Overlap of adult species range with fishery	>50% of stock occurs in the area fished	Between 25% and 50% of the stock occurs in the area fished	<25% of stock occurs in the area fished
	2) Distribution	Only in the country/ fishery	Limited range in the region	Throughout region/ global distribution
Encounterability	1) Habitat	Habitat preference of species make it highly likely to encounter trawl gear (e.g. demersal, muddy/sandy bottom)	Habitat preference of species make it moderately likely to encounter trawl gear (e.g. rocky bottom/reefs)	Depth or distribution of species make it unlikely to encounter trawl gear (e.g. epi-pelagic or meso-pelagic)
	2) Depth range	High overlap with trawl fishing gear (20 to 60 m depth)	Medium overlap with trawl fishing gear (10 to 20 m depth)	Low overlap with trawl fishing gear (0 to 10 m, >70 m depth)
Selectivity		Species >2 times mesh size or up to 4 m length	Species 1 to 2 times mesh size or 4 to 5 m length	Species <mesh size or >5 m length
Post capture mortality		Most dead or retained Trawl tow >3 hours	Alive after net hauled Trawl tow 0.5 to 3 hours	Released alive Trawl tow <0.5 hours

Note: Availability 2 is only used when there is no information for Availability 1; the most conservative score between Encounterability 1 and 2 is used.

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