MarinTrust Standard V2

By-product Fishery Assessment

Bluefin tuna (Thunnus thynnus) in FAO 27, 37 (Eastern Atlantic and Mediterranean waters)

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Table 1 Application details and summary of the assessment outcome

Fishery Under Assessment	Species:	Bluefin tuna (*Thunnus thynnus*)
	Geographical area:	FAO Area 27, 37 (Eastern Atlantic and Mediterranean waters)
	Country of origin of the product:	Malta (Flag country)
	Stock:	Eastern Atlantic and Mediterranean waters Bluefin tuna, FAO 27 and 37
Date	20 July 2023	
Report Code	MLT01	
Assessor	Matthew Jew	
Country of origin of the product - PASS	Malta (Flag country)	
Country of origin of the product - FAIL	NA	

Application details and summary of the assessment outcome			
Company Name(s): Aquaculture Resources Ltd.			
Country: Malta			
Email address:		Applicant Code:	
Certification Body Details			
Name of Certification Body:		Global Trust Certification	
Assessor	Peer Reviewer	Assessment Days	Initial/Surveillance/ Re-approval
Matthew Jew	Ivan Mateo	0.5	Initial
Assessment Period	Up to July 2023		

Scope Details	
Main Species	Bluefin tuna (*Thunnus thynnus*)
Stock	Eastern Atlantic and Mediterranean waters bluefin tuna, FAO 27 and 37
Fishery Location	FAO 27 (Northeast Atlantic) and 37 (Mediterranean waters)
Management Authority (Country/ State)	International Commission for the Conservation of Atlantic Tunas (ICCAT) and Contracting (State) Parties
Gear Type(s)	Not provided by client
Outcome of Assessment	
Peer Review Evaluation	Agree with assessor's assessment
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. Bluefin tuna (*Thunnus thynnus*) does not appear as Endangered or Critically Endangered on IUCN's Red List, and does not appear in CITES appendices; therefore, *Thunnus thynnus* is eligible for approval for use as Marin trust by-product raw material. Bluefin tuna in the eastern Atlantic and the Mediterranean (known as eastern bluefin tuna) is managed by ICCAT, an intergovernmental regional fishery management organisation established in 1966. Following the scientific committee's warnings on a possible stock collapse and increasing public concern, ICCAT adopted in 2006 a bluefin tuna recovery plan for 2007-2022 (Recommendation 06-05). It introduced restrictive measures, such as shortening the fishing season and protecting juvenile fish by increasing the minimum fishing size. The recovery plan was gradually reinforced in the following years. In particular, ICCAT agreed on a significant decrease in the TACs, which after 2010 reached the level of the scientific advice. Subsequent stock assessments in 2012-2014 displayed positive trends, and perception of the state of the bluefin tuna stock greatly improved. In 2014, following scientific advice, ICCAT endorsed a 20 % annual TAC increase for the next three years. In 2017, the scientific committee recommended a progressive increase of the TAC up to 36 000 tonnes in 2020. It also showed that the state of the stock no longer appears to require the emergency measures of the recovery plan. Accordingly, in 2018 ICCAT moved from the recovery plan to a management plan (Recommendation 18-02), which entered into force in June 2019. Subsequently, ICCAT amended the management plan in November 2019 (Recommendation 19-04). The 2017 and 2020 Bluefin tuna assessment results have been derived from a Virtual Population Analysis (VPA) (ICCAT, 2020). The stock is assessed as Category C. The 2020 updated stock assessment has included the indices used for the 2017 stock assessment (seven CPUE series and three fisheries independent indices) which were updated up to 2018. The 2017 assessment estimated BMSY to be around 270,000 tonnes. Although the 2020 updated stock assessment made no reference to BMSY or other biomass -based reference points, SSB is projected to be higher than 750,000 tonnes and hence the stock is highly likely to have a biomass above the limit reference point (or proxy). Furthermore, given the large biomass increase and the low fishing mortality, it is highly likely that the stock is not reproductively impaired (i.e. below limit reference point). The fishery passes Clause C1.1. and C1.2. Therefore, eastern bluefin tuna in FAO 27 and 37 is APPROVED for the production of fishmeal and fish oil under the current MarinTrust v 2.0 by-products.
Fishery Assessment Peer Review Comments
The assessor correctly classified eastern bluefin tuna in FAO 27 and 37 in category C, the stock is managed, and reference points are defined to assess the stock status against. Fishery removals from the stock are considered in the stock assessment process. The most recent stock assessment shows that the stock is considered to have a biomass well above the limit reference point. Therefore, eastern bluefin tuna in FAO 27 and 37 passes both C1.1 and C1.2 and therefore eastern bluefin tuna in FAO 27 and 37 is approved
Notes for On-site Auditor
Determine which gear is being used to harvest eastern bluefin tuna

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]
Bluefin tuna	*Thunnus thynnus*	Eastern Atlantic and Mediterranean waters Bluefin Tuna	ICCAT and Contracting (State) Parties	C	LC (Global)	No

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

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	**Bluefin tuna (*Thunnus thynnus*)**	
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.

The 2017 and 2020 Bluefin tuna assessment results have been derived from a Virtual Population Analysis (VPA) (ICCAT, 2020). Three modelling platforms were used to conduct the assessment of the E-BFT in 2022. As in previous assessments, a virtual population analysis (VPA) was conducted, and two additional platforms, Stock Synthesis (SS) and the age-structured assessment programme (ASAP), were applied.

Reported catches in the East Atlantic and Mediterranean reached a peak of over 50,000 t in 1996 and then decreased substantially, stabilizing at around the TAC levels established by ICCAT for the most recent period (Figure 1). Catches between 2017 and 2021 (as of September 2022) were respectively 23,665 t, 27,782 t, 31,134 t, 35,038 t and 35,075 t for the East Atlantic and Mediterranean, of which 16,450 t, 19,624 t, 22,041 t, 24,164 t and 24,729 t were reported for the Mediterranean for those same years.

The Committee is aware of ongoing, unquantified, IUU catches that represents a serious impediment to being able to determine the productivity of the stock and to provide reliable TAC advice. In response, the Committee urges identification and quantification of IUU catches so that it can provide more accurate biomass-based catch advice and obtain more accurate scientific understanding of stock productivity.

Available information has demonstrated that catches of bluefin tuna from the East Atlantic and Mediterranean were seriously under-reported between the mid-1990s through 2007. The Committee estimated that the realized total catch during this period was likely of the order of 50,000 t to 61,000 t per year, based on the number of vessels operating in the Mediterranean Sea and their respective catch rates.

Since the 2017 Stock Assessment, these estimates (1998-2007) have been treated as the actual catches.
During the 2022 Stock Assessment meeting, the decision was made to use ten abundance indices up to 2020 (seven CPUE series and three fisheries independent indices). CPUE indices have been affected appreciably by regulatory measures through changes to operational patterns, length of the fishing season and target sizes; thus, it is difficult to distinguish the effect of these changes on CPUE index values from the effects of changes in abundance.

Reported catches are presented in the figure below:

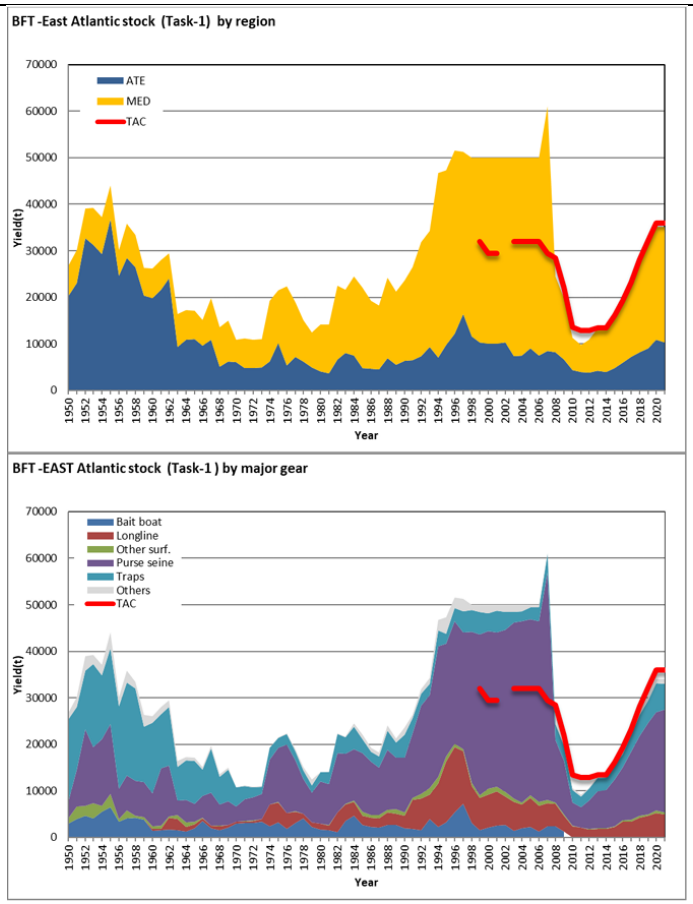

Figure 1. Reported catch for the East Atlantic and Mediterranean from Task 1 data from 1950 to 2021 split by main geographic areas (top panel) and by gears (bottom panel) together with unreported catch estimated by the Committee from 1998 to 2007 and TAC levels since 1998.
Source: ICCAT, 2022.

Therefore, fishery removals of the species in the fishery under assessment are included in the stock assessment process and therefore the stock PASSES clause C1.1

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 3 models showed similar trends in spawning stock biomass (SSB), with a progressive decline in SSB from the 1970s until the implementation of a Recovery Plan developed in 2006 (Rec. 06-05). Since the late 2000s there has been a strong increase in SSB, although the magnitude and rate of increase differ among the three models, with VPA indicating a lowest biomass while ASAP indicates the largest increase. Uncertainty in the rate and magnitude of the increase in SSB is evident for all three platforms and in the sensitivity tests conducted for each platform, especially in recent years (Figure 2). The fishing mortality of the age group 2-5 and age 10+ fish showed an increasing trend since the 1970s, whereas the F for both the age group 2-5 and age 10 plus shows

a drastic decline in fishing mortality since the establishment of the 2006 Recovery Plan (Figure 2). Recently, fishing mortality has been increasing, however, when average over all three models, fishing mortality is still below fishing mortality target. Recruitments estimated by the three assessment platforms show considerable variability, especially over the recent period. In general, however, there are two distinct periods, one with low recruitments before 1990 and the other with higher recruitments thereafter (Figure 2).

An independent review concluded that the results of the 3 models are sufficient to provide general management advice that abundance has increased and is likely to continue to increase given recent patterns of fishing mortality (effort). However, the review also recommended against using the results from these models for TAC advice.

The current perception of the stock status depends on recruitment estimates which are highly uncertain. The different models showed a relatively wide range of stock status estimates relative to the F0.1 reference level, ranging from overfishing to not overfishing ($F_{CURRENT}/F_{0.1}$): VPA = 1.16; SS = 0.72 and ASAP = 0.54. To inform stock status, the Committee recommended that the results of the three models be considered equally, by integrating the results. The resultant point estimate of FCUR is below F0.1 ($F_{CURRENT}/F_{0.1}$= 0.81; 95% CI 0.48-1.62), indicating a stock status determination of not overfishing. Furthermore, fishing mortality rates are much lower than those during the 1998-2007 period.

The 2017 assessment estimated B_{MSY} to be around 270,000 tonnes. Although the 2022 stock assessment made no reference to the B_{MSY} or other biomass-based reference point, SSB is projected to be higher than 750,000 tonnes and hence the stock is highly likely to have a biomass above the limit reference point (or proxy). Furthermore, given the large biomass increase and the low fishing mortality it is highly likely that the stock is not reproductively impaired (i.e. below limit reference point).

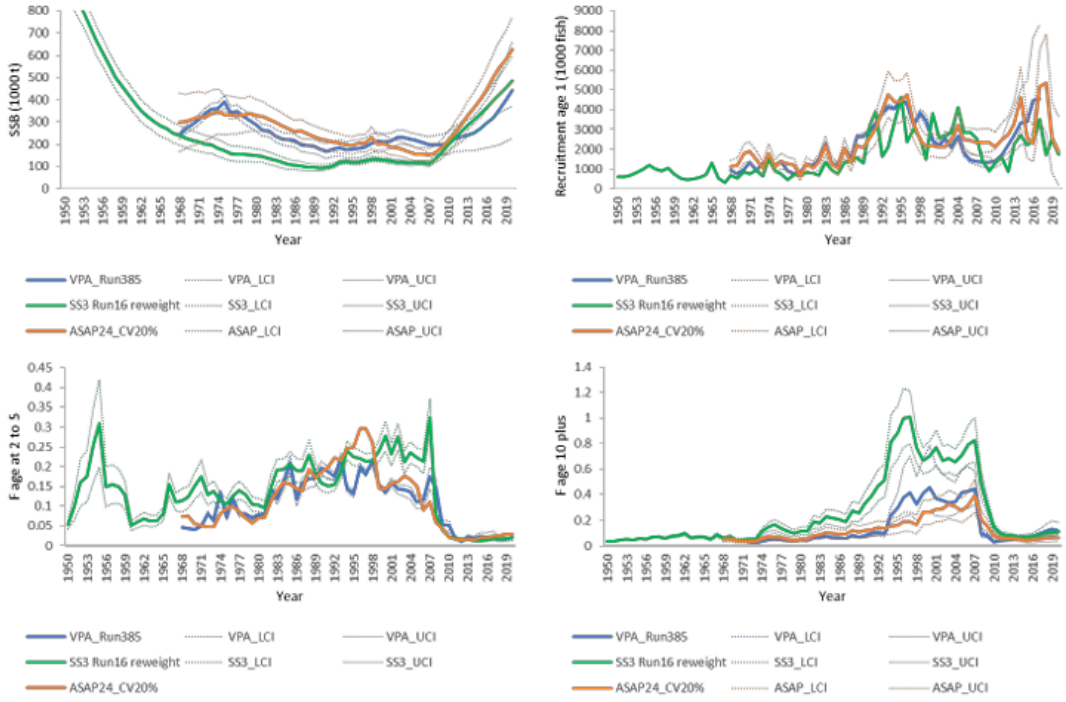

Figure 2. Comparisons of the trends in estimated spawning stock biomass (SSB), recruitment (age 1), F at age 2 to 5, and F at age 10 plus group between base cases by model platform: VPA (blue lines), Stock Synthesis (green lines), and ASAP (orange lines). The time series of recruitments for the VPA have the terminal three years removed as it is standard practice not to consider these due to their estimates being unreliable.
Source: ICCAT, 2022.

Therefore, the species is considered, in its most recent stock assessment, to have a biomass above the limit reference point and it PASSES clause C1.2.

References

EU, 2022. MANAGEMENT PLAN FOR ATLANTIC BLUEFIN TUNA. European Parliament https://www.europarl.europa.eu/legislative-train/theme-fisheries-pech/file-management-plan-for-atlantic-bluefintuna#:~:text=Like%20all%20tunas%20in%20the,tuna%20since%20the%20early%201990s

ICCAT, 2020. 2020 Advice to the Commission East Atlantic and Mediterranean Sea stock assessment summary. International Commission for the Conservation of Atlantic Tunas. https://www.iccat.int/en/assess.html#

ICCAT, 2017. Report of the 2017 ICCAT bluefin stock assessment meeting (Madrid, Spain 20-28 July, 2017). International Commission for the Conservation of Atlantic Tunas: https://www.iccat.int/en/assess.html#

ICCAT, 2022. Summary of the report of the 2022 ICCAT eastern Atlantic and Mediterranean bluefin tuna stock assessment meeting (Madrid, Spain, hybrid meeting, 4-9 July 2022). International Commission for the Conservation of Atlantic Tunas: https://www.iccat.int/Documents/SCRS/ExecSum/EBFT_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		
	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