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IFFO RS
Global Standard for Responsible Supply
of Marine Ingredients

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Global Standard for Responsible Supply of Marine Ingredients Fishery Assessment Methodology and Template Report V2.0



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Fishery Under Assessment	Yellowfin tuna (<i>Thunnus albacares</i>) FAO 87 Pacific Eastern; FAO 77 Eastern Central Pacific Ocean
Date	March 2019
Assessor	Jim Daly

Application details and summary of the assessment outcome				
Name: Productos Pesqueros, Negocios Industriales, Tadel.				
Address:				
Country: Ecuador		Zip:		
Tel. No.:		Fax. No.:		
Email address:		Applicant Code		
Key Contact:		Title:		
Certification Body Details				
Name of Certification Body:		SAI Global Ltd		
Assessor Name	Peer Reviewer	Assessment Days	Initial/Surveillance/Re-approval	Whole fish/ By-product
Jim Daly	Conor Donnelly	0.5	SURV 2	By-product
Assessment Period	2018			

Scope Details	
Management Authority (Country/State)	Inter-American Tropical Tuna Commission (IATTC).
Main Species	Yellowfin tuna (<i>Thunnus albacares</i>)
Fishery Location	Eastern Pacific Ocean (EPO) FAO 87, Eastern Central Pacific FAO 77
Gear Type(s)	Longline, pole and line, purse seine, troll, fish aggregating devices (FADs)
Outcome of Assessment	
Overall Outcome	PASS
Clauses Failed	NONE
Peer Review Evaluation	PASS
Recommendation	PASS

Assessment Determination
<p>Yellowfin tuna in the Eastern Pacific (EPO) and Eastern Central Pacific (ECP) fall under the jurisdiction of the Inter-American Tropical Tuna Commission (IATTC). The IATTC produce regular Fishery Status Reports, the most recent of which was published in July 2018 (IATTC, 2018). While Yellowfin are distributed across the Pacific Ocean the bulk of the catch is made in the eastern (EPO) and western (WPO) regions. Purse-seine catches are relatively low in the vicinity of the western boundary of the EPO at 150°W. The majority of the catch is taken in purse-seine sets on yellowfin associated with dolphins, and floating objects. The species is considered a single stock in the assessment area (IATTC, 2018).</p> <p>Historically, the dolphin-associated and un-associated purse-seine fisheries have had the greatest impact on the spawning biomass of yellowfin, followed by floating-object fisheries. In more recent years, the impact of the floating-object fisheries has been greater than that of the un-associated fisheries. The impacts of the longline and purse-seine discard fisheries are much less, and have decreased in recent years. Fishery removals of the species in the fishery under assessment are included in the stock assessment process. The species passes Clause C1.1.</p> <p>The assessment of yellowfin tuna in 2017 is similar to the previous assessment, with the addition of new and updated data (e.g. catches). There is uncertainty about recent and future levels of recruitment and biomass. The spawning biomass ratio (SBR) has been average or below average since 2005, except during 2008-2010. However, the SBR at the start of 2018 was estimated to be 0.29, above MSY level (0.27), due to above-average recruitments of 2015-2016.</p> <p>The recent fishing mortality (F) is slightly above the MSY level (F multiplier = 0.99), and current spawning biomass (S) is estimated to be above that level (S_{recent}/S_{MSY} = 1.08). The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) and passes Clause C 1.2.</p>

Global stocks of Yellowfin tuna are classified as near threatened (IUCN Red List); this species is not on the current CITES list of endangered species (websites assessed 01.03.2019).
Yellowfin tuna, in the assessment area, is approved by the assessment team for the production of fishmeal and fish oil under the IFFO-RS v 2.0 standard (by-products).
Peer Review Comments
Agree
Notes for On-site Auditor

Note: This table should be completed for whole fish assessments only.

Species-Specific Results

Category	Species	% landings	Outcome (Pass/Fail)	
Category A			A1	
			A2	
			A3	
			A4	
Category B				
Category C	Yellowfin tuna (<i>Thunnus albacares</i>)	N/A	PASS	
Category D				

[List all Category A and B species. List approximate total %age of landings which are Category C and D species; these do not need to be individually named here]

HOW TO COMPLETE THIS ASSESSMENT REPORT

This assessment template uses a modular approach to assessing fisheries against the IFFO RS standard.

Whole Fish

The process for completing the template for a **whole fish** assessment is as follows:

1. ALL ASSESSMENTS: Complete the Species Characterisation table, to determine which categories of species are present in the fishery.
2. ALL ASSESSMENTS: Complete clauses M1, M2, M3: Management.
3. IF THERE ARE CATEGORY A SPECIES IN THE FISHERY: Complete clauses A1, A2, A3, A4 for **each** Category A species.
4. IF THERE ARE CATEGORY B SPECIES IN THE FISHERY: Complete the Section B risk assessment for **each** Category B species.
5. IF THERE ARE CATEGORY C SPECIES IN THE FISHERY: Complete clause C1 for **each** Category C species.
6. IF THERE ARE CATEGORY D SPECIES IN THE FISHERY: Complete Section D.
7. ALL ASSESSMENTS: Complete clauses F1, F2, F3: Further Impacts.

A fishery must score a pass in **all applicable clauses** before approval may be recommended. To achieve a pass in a clause, the fishery/species must meet **all** of the minimum requirements.

By-products

The process for completing the template for **by-product raw material** is as follows:

1. ALL ASSESSMENTS: Complete the Species Characterisation table with the names of the by-product species and stocks under assessment. The ‘% landings’ column can be left empty; all by-products are considered as Category C and D.
2. IF THERE ARE CATEGORY C BYPRODUCTS UNDER ASSESSMENT: Complete clause C1 for **each** Category C by-product.
3. IF THERE ARE CATEGORY D BYPRODUCTS UNDER ASSESSMENT: Complete Section D.
4. ALL OTHER SECTIONS CAN BE DELETED. Clauses M1 - M3, F1 - F3, and Sections A and B do not need to be completed for a by-product assessment.

By-product approval is awarded on a species-by-species basis. Each by-product species scoring a pass under the appropriate section may be approved against the IFFO RS Standard.

SPECIES CATEGORISATION

The following table should be completed as fully as the available information permits. Any species representing more than 0.1% of the annual catch should be listed, along with an estimate of the proportion of the catch each species represents. The species should then be divided into Type 1 and Type 2 as follows:

- **Type 1 Species** can be considered the ‘target’ or ‘main’ species in the fishery. They make up the bulk of annual landings and are subjected to a detailed assessment.
- **Type 2 Species** can be considered the ‘bycatch’ or ‘minor’ species in the fishery. They make up a small proportion of the annual landings and are subjected to relatively high-level assessment.

Type 1 Species must represent 95% of the total annual catch. Type 2 Species may represent a maximum of 5% of the annual catch (see Appendix B).

Species which make up less than 0.1% of landings do not need to be listed (NOTE: ETP species are considered separately). The table should be extended if more space is needed. Discarded species should be included when known.

The ‘stock’ column should be used to differentiate when there are multiple biological or management stocks of one species captured by the fishery. The ‘management’ column should be used to indicate whether there is an adequate management regime specifically aimed at the individual species/stock. In some cases it will be immediately clear whether there is a species-specific management regime in place (for example, if there is an annual TAC). In less clear circumstances, the rule of thumb should be that if the species meets the minimum requirements of clauses A1-A4, an adequate species-specific management regime is in place.

NOTE: If any species is categorised as Endangered or Critically Endangered on the IUCN Red List, or if it appears in the CITES appendices, it **cannot** be approved for use as an IFFO RS raw material. This applied to whole fish as well as by-products.

TYPE 1 SPECIES (Representing 95% of the catch or more)

Category A: Species-specific management regime in place.

Category B: No species-specific management regime in place.

TYPE 2 SPECIES (Representing 5% OF THE CATCH OR LESS)

Category C: Species-specific management regime in place.

Category D: No species-specific management regime in place.

Common name	Latin name	Stock	% of landings	Management	Category
Yellowfin tuna	<i>Thunnus albacares</i>	FAO 87, 77	N/A	IATTC	C

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. 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. A Category C species does not meet the minimum requirements of clause C1 should be re-assessed as a Category D species.

Species Name		Yellowfin tuna <i>Thunnus albacares</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.
	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.
		Clause outcome: PASS

Evidence

C1.1:

The current stock assessment assumes a single stock of yellowfin in the EPO and ECP. The bulk of the catch is made in Eastern and Western regions. An integrated statistical age-structured stock assessment model was used in the assessment, which is based on the assumption that there is a single stock of yellowfin. The assessment of yellowfin tuna is similar to the previous assessment, with the addition of new and updated data (e.g. catches). Figures for 2017 are preliminary (**Figure 1**):

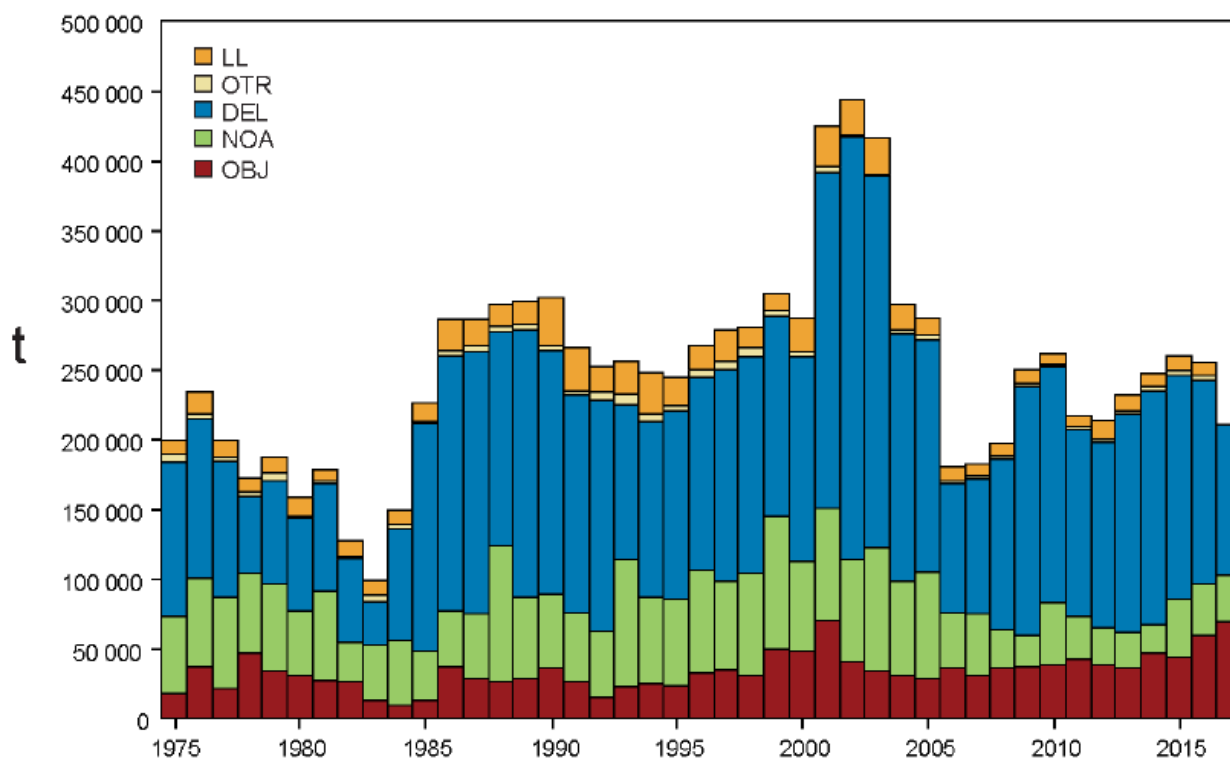


Figure 1: Total catches (retained catches plus discards) for purse-seine fisheries, and retained catches for pole-and-line and longline fisheries, of yellowfin tuna in the eastern Pacific Ocean, 1975- 2017. **R1**

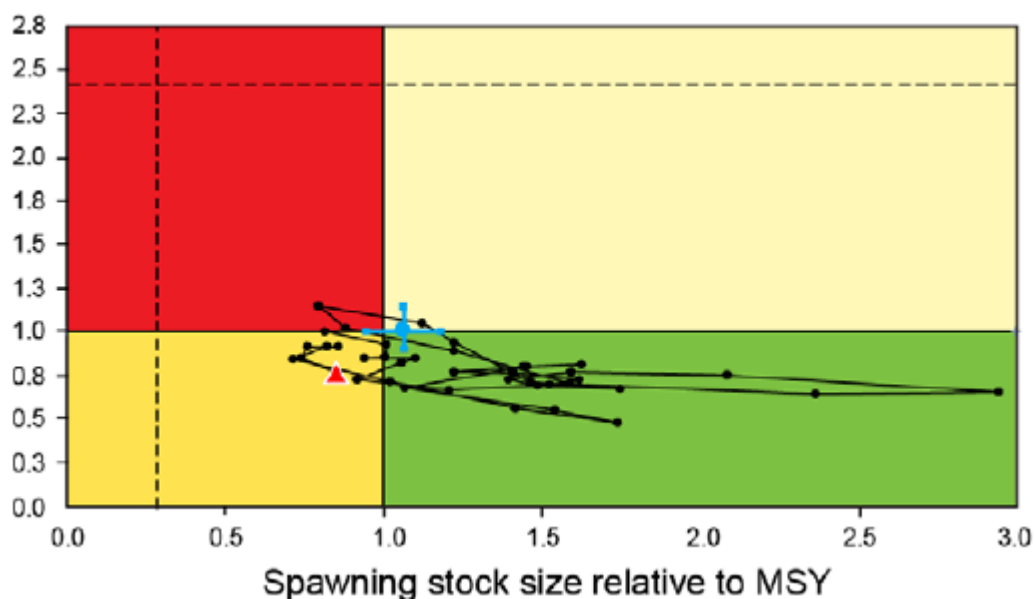
Fishery removals of the species in the fishery under assessment are included in the stock assessment process.
The species passes Clause C1.1.

C1.2:

The IATTC adopted interim target and limit reference points (TRP and LRP) for tropical tunas including yellowfin in 2014. The TRP is the biomass (B) and fishing mortality rate (F) corresponding to maximum sustainable yield (B_{msy} and F_{msy}). The LRP is the B and F associated with a 50% reduction in unfished recruitment (50% R₀) using a conservative assumption of stock recruitment relationship (steepness, or h = 0.75).

The stock is currently above its LRP but below its TRP. The spawning biomass ratio (SBR) the ratio of spawning biomass to that of the unfished population at the start of 2017 was estimated to be 0.23, below MSY level (0.27). Since 2011 the SBR has been estimated to be slightly below or at the MSY level, following the series of low recruitments since 2007, which coincided with a series of strong La Niña events.

Recent fishing mortality (F) is slightly above the MSY level (F multiplier = 0.99), and current spawning biomass (S) is estimated to be above that level (S_{recent}/S_{MSY} = 1.08) **Figure 2:**



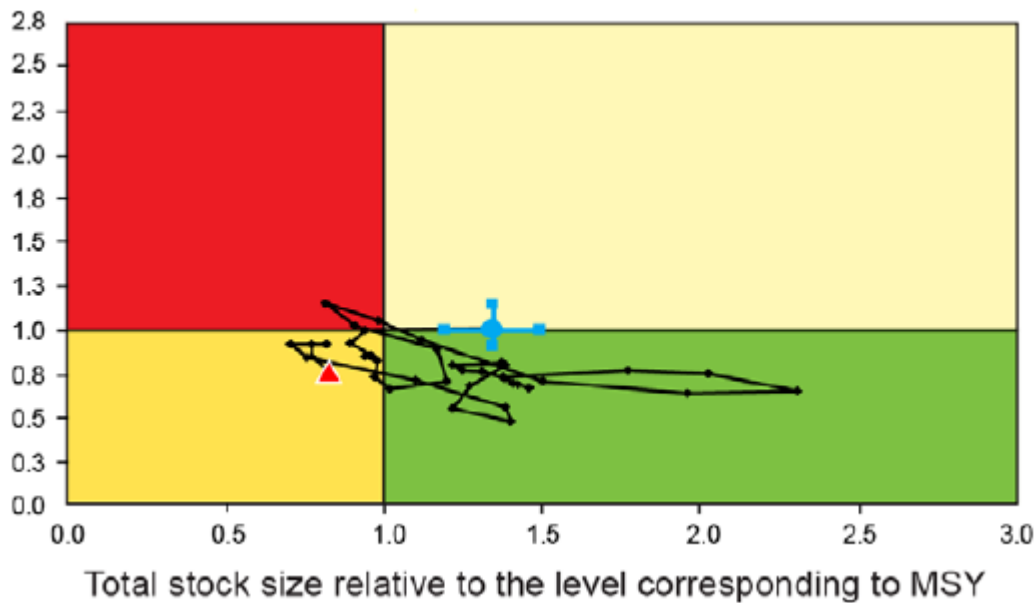


Figure 2: Kobe (phase) plot of the time series of estimates of stock size (top panel: spawning biomass; bottom panel: total biomass of fish aged 3+ quarters) and fishing mortality relative to their MSY reference points. **R1**

The panels represent interim target reference points (SMSY and FMSY). The dashed lines represent the interim limit reference points of $0.28 *SMSY$ and $2.42 *FMSY$. These limit reference points correspond to a 50% reduction in recruitment from its average unexploited level based on a conservative steepness value ($h = 0.75$) for the Beverton-Holt stock-recruitment relationship. Each dot is based on the average exploitation rate over three years; the large blue dot indicates the most recent estimate. The squares around the most recent estimate represent its approximate 95% confidence interval. The triangle represents the first 3-year period.

The species is considered, in its most recent stock assessment, to have a biomass above the limit reference point (or proxy) **and passes Clause C1.2.**

References:

- R1** INTER-AMERICAN TROPICAL TUNA COMMISSION (IATTC) July 2018: Yellowfin tuna pp64-74 <http://www.iattc.org/FisheryStatusReports/2017/ENG.htm>
- R2** Fishsource Yellowfin Tuna (EPO) https://www.fishsource.org/stock_page/1055
- R3** IUCN Red List www.iucn.org
- R4** CITES LIST www.cites.org

Standard clauses 1.3.2.2