



RESPONSIBLE  
SUPPLY

**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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## IFFO RS

Global Standard for Responsible Supply  
of Marine Ingredients



<b>Fishery Under Assessment</b>	<b>Yellowfin Tuna (<i>Thunnus albacares</i>) FAO 77,87</b>
<b>Date</b>	<b>March 2018</b>
<b>Assessor</b>	<b>Deirdre Hoare</b>

<b>Application details and summary of the assessment outcome</b>				
Name:				
Address:				
Country: Spain & Portugal		Zip:		
Tel. No.:		Fax. No.:		
Email address:		Applicant Code		
Key Contact:		Title:		
<b>Certification Body Details</b>				
Name of Certification Body:		SAI Global		
Assessor Name	Peer Reviewer	Assessment Days	Initial/Surveillance/Re-approval	Whole fish/ By-product
Deirdre Hoare	Conor Donnelly	1	Initial	Byproduct
Assessment Period	2017			

<b>Scope Details</b>	
<b>Management Authority (Country/State)</b>	Spain & Portugal
<b>Main Species</b>	Yellowfin Tuna ( <i>Thunnus albacares</i> )
<b>Fishery Location</b>	FAO 77 Pacific Eastern Central, 87 Pacific South East
<b>Gear Type(s)</b>	All gears
<b>Outcome of Assessment</b>	
<b>Overall Outcome</b>	Pass
<b>Clauses Failed</b>	None
<b>Peer Review Evaluation</b>	Approve byproduct
<b>Recommendation</b>	Approve byproduct

<b>Assessment Determination</b>
<p>Legal and administrative frameworks exist at the national and international level. Sufficient research is conducted on the species to allow informed management of yellowfin tuna. Although the biomass is slightly below BMSY levels due to the uncertainty in the assessment and the current fishing levels approval was awarded by the assessment team. This species is categorised as Near Threatened by the IUCN Red List from its assessment in 2011.</p> <p><a href="http://www.iucnredlist.org/details/21857/0">http://www.iucnredlist.org/details/21857/0</a></p>
<b>Peer Review Comments</b>
Agree with assessment determination
<b>Notes for On-site Auditor</b>

## Species-Specific Results

Category	Species	% landings	Outcome (Pass/Fail)	
Category A			A1	
			A2	
			A3	
			A4	
Category B				
Category C	Yellowfin tuna	NA	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.

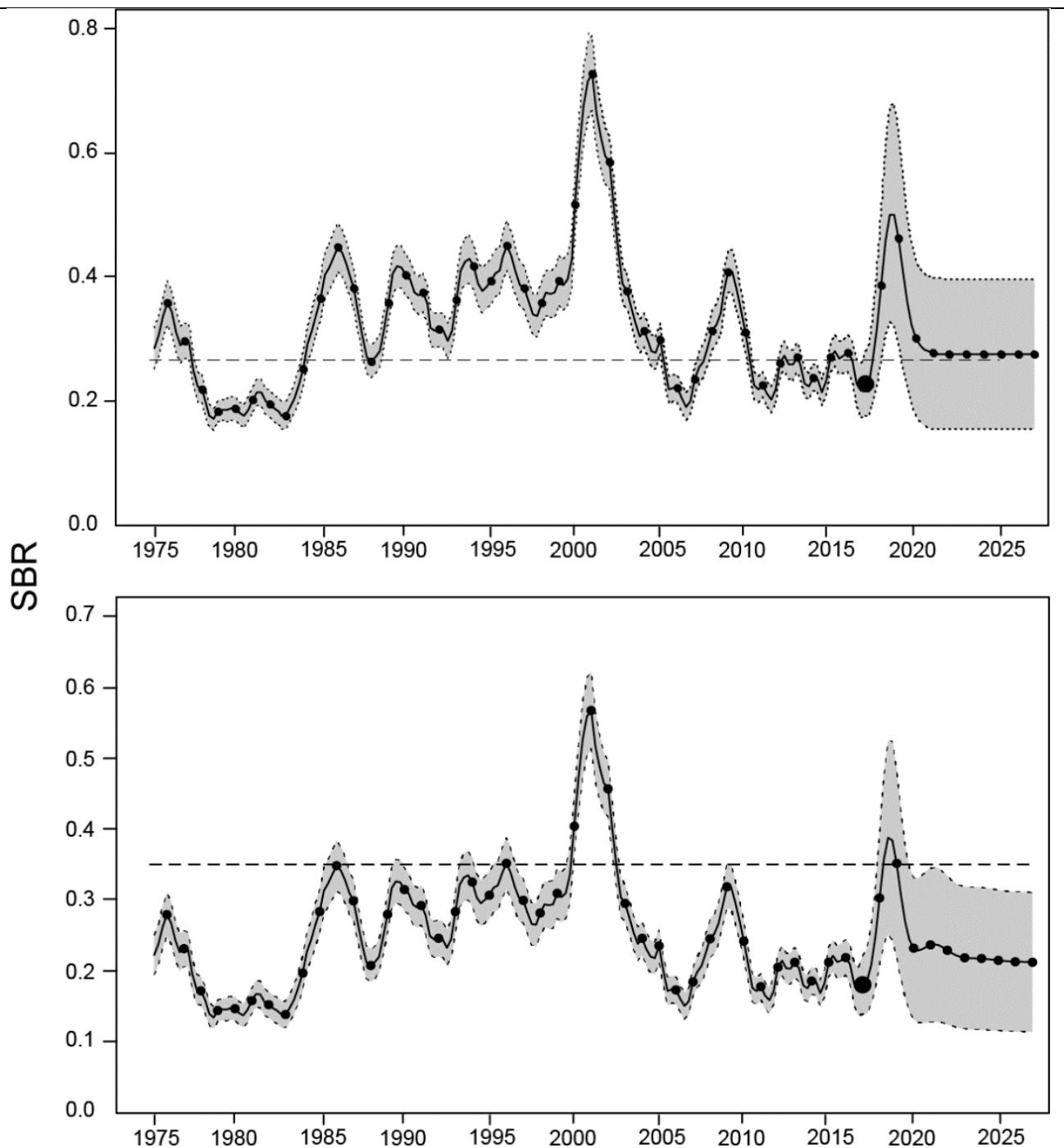
Common name	Latin name	Stock	% of landings	Management	Category
Yellowfin tuna	<i>Thunnus albacares</i>	FAO 77,87	NA	IATTC	C

## 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.	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
Evidence			
Fishery removals of yellowfin tuna such as: retained catches, discards, indices of abundance, and the size compositions of the catches of the various fisheries were used to conduct the stock assessments (Minte-Vera et al. 2016).			
Parameter		Value	
C <sub>recent</sub> /MSY		0.94	
B <sub>recent</sub> /B <sub>MSY</sub>		0.96	
S <sub>recent</sub> /S <sub>MSY</sub>		0.95	
MSY		272,841 t	
Fishing mortality rates for yellowfin tuna are below maximum sustainable yield (MSY) levels, while the biomass is right at those levels. The spawning biomass ratio at the start of 2016 was slightly below MSY levels and the population is considered to be slightly overfished. The spawning biomass ratio was below sustainable levels between 1977 and 1983. From 1984 to 2005 the biomass remained above sustainable levels. Since 2006, the biomass has been below the average. At the start of 2015, the spawning biomass ratio was slightly below sustainable levels.			
However, these interpretations are uncertain, and highly sensitive to the assumptions made about the steepness parameter (h) of the stock-recruitment relationship, the average size of the older fish (L2), and the assumed levels of natural mortality (M). With the current (2013-2015) fishing mortality and average recruitment, the SBR is predicted to stabilize slightly above the MSY in the future (Figure. 1) (Minte-Vera et al. 2016).			



**FIGURE 1.** Spawning biomass ratios (SBRs) for yellowfin tuna in the EPO, including projections for 2016-2026 based on average fishing mortality rates during 2013-2015, from the base case (top) and the sensitivity analysis that assumes a stock-recruitment relationship ( $h = 0.75$ , bottom). The dashed horizontal line (at 0.27 and 0.35, respectively) identifies the SBR at MSY. The solid curve illustrates the maximum likelihood estimates, and the estimates after 2016 (the large dot) indicate the SBR predicted to occur if fishing mortality rates continue at the average of that observed during 2013-2015, and average recruitment occur during the next 10 years. The shaded area indicates the approximate 95% confidence intervals around those estimates.

## References



Minte-Vera, C.V., Aires-da-Silva, A. and Maunder, M. 2016. Status of yellowfin tuna in the eastern Pacific Ocean in 2015 and outlook for the future. IATTC Document SAC-07-05b. <https://www.iattc.org/Meetings/Meetings2016/SAC7/PDFfiles/SAC-07-05b-YFT-assessment-2015.pdf> Fishsource. [https://www.fishsource.org/fishery\\_page/2810](https://www.fishsource.org/fishery_page/2810)

*Standard clauses 1.3.2.2*

## **SOCIAL CRITERION**

In addition to the scored criteria listed above, applicants must commit to ensuring that vessels operating in the fishery adhere to internationally recognised guidance on human rights. They must also commit to ensuring there is no use of enforced or unpaid labour in the fleet(s) operating upon the resource.

## Appendix A - Determining Resilience Ratings

The assessment of Category B species described in this assessment report template utilises a resilience rating system suggested by the American Fisheries Society. This approach was chosen because it is also used by FishBase, and so the resilience ratings for many thousands of species are freely available online. As described by FishBase, the following is the process used to arrive at the resilience ratings:

*“The American Fisheries Society (AFS) has suggested values for several biological parameters that allow classification of a fish population or species into categories of high, medium, low and very low resilience or productivity (Musick 1999). If no reliable estimate of  $r_m$  (see below) is available, the assignment is to the lowest category for which any of the available parameters fits. For each of these categories, AFS has suggested thresholds for decline over the longer of 10 years or three generations. If an observed decline measured in biomass or numbers of mature individuals exceeds the indicated threshold value, the population or species is considered vulnerable to extinction unless explicitly shown otherwise. If one sex strongly limits the reproductive capacity of the species or population, then only the decline in the limiting sex should be considered. We decided to restrict the automatic assignment of resilience categories in the Key Facts page to values of  $K$ ,  $t_m$  and  $t_{max}$  and those records of fecundity estimates that referred to minimum number of eggs or pups per female per year, assuming that these were equivalent to average fecundity at first maturity (Musick 1999). Note that many small fishes may spawn several times per year (we exclude these for the time being) and large live bearers such as the coelacanth may have gestation periods of more than one year (we corrected fecundity estimates for those cases reported in the literature). Also, we excluded resilience estimates based on  $r_m$  (see below) as we are not yet confident with the reliability of the current method for estimating  $r_m$ . If users have independent  $r_m$  or fecundity estimates, they can refer to Table 1 for using this information.”*

Parameter	High	Medium	Low	Very low
Threshold	0.99	0.95	0.85	0.70
$r_{max}$ (1/year)	> 0.5	0.16 – 0.50	0.05 – 0.15	< 0.05
$K$ (1/year)	> 0.3	0.16 – 0.30	0.05 – 0.15	< 0.05
Fecundity (1/year)	> 10,000	100 – 1000	10 – 100	< 10
$t_m$ (years)	< 1	2 – 4	5 – 10	> 10
$t_{max}$ (years)	1 - 3	4 – 10	11 – 30	> 30

Taken from the FishBase manual, “Estimation of Life-History Key Facts”:

<http://www.fishbase.us/manual/English/key%20facts.htm#resilience>

## Appendix B – Background on the 5% catch rule

The proposed fishery assessment methodology uses a species categorisation approach to divide the catch in the assessment fishery into groups. These groups are:

- **Category A:** “Target” species with a species-specific management regime in place.
- **Category B:** “Target” species with no species-specific management regime in place.
- **Category C:** “Non-target” species with a species-specific management regime in place.
- **Category D:** “Non-target” species with no species-specific management regime in place

The distinction between 'target' and 'non-target' species is made to enable the assessment to consider the impact of the fishery on all the species caught regularly, without requiring a full assessment be conducted for each. Thus 'target' species are subjected to a more detailed assessment, while 'non-target' species are considered more briefly. For the purposes of the IFFO RS fishery assessment, 'target' and 'non-target' species are defined by their prevalence in the catch, by weight. Applicants must declare which species are considered 'target' species in the fishery, and the combined weight of these must be at least 95% of the annual catch. The remaining 5% can be made up of 'non-target' species. Note also that ETP species are considered separately, irrespective of their frequency of occurrence in the catch.

The proposed use of 5% as a limit for 'non-target' species is one area in which feedback is being sought via the public consultation. The decision to propose a value of 5% ensures consistency with other fishery assessment programmes, such as the MSC which uses 5% to distinguish between 'main' and 'minor' species (see MSC Standard, SA3.4 and GSA3.4.2); and Seafood Watch, which uses 5% when defining the 'main' species for the assessment (see Seafood Watch Standard, Criterion 2). The value is also consistent with the approach used in Version 1 of the IFFO RS Standard, in which up to 5% of the raw material could be comprised of 'unassessed' species.

**Comments on this proposition are welcomed along with any other feedback on the proposed approach.**