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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	Plaice <i>Pleuronectes platessa</i> ICES Divisions VII; VIa; Subarea IV Division 20 (Northeast Atlantic)
Date	March 2019
Assessor	Jim Daly

Application details and summary of the assessment outcome				
Name: Pelagia				
Address:				
Country: UK; Ireland		Zip:		
Tel. No.:		Fax. No.:		
Email address:		Applicant Code		
Key Contact: Geraldine Fox		Title: Quality Manager - Ireland		
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	Vito Romito	0.5	Re-approval	By-product
Assessment Period	2018			

Scope Details	
Management Authority (Country/State)	EU, Common Fisheries Policy
Main Species	Plaice <i>Pleuronectes platessa</i>
Fishery Location	ICES Divisions VII; VIa; Subarea IV Division 20
Gear Type(s)	All
Outcome of Assessment	
Overall Outcome	Pass (7 Stocks) Fail (1 Stock)
Clauses Failed	C 1.2 (Stock in Division VII h-k Celtic Sea)
Peer Review Evaluation	Approve
Recommendation	Pass

Assessment Determination
<p>European plaice in ICES Divisions are managed under the EU Common Fisheries Policy. ICES identify several stocks and produce stock assessments where there is sufficient information to do so:</p> <ul style="list-style-type: none"> • Division VIIa (Irish Sea) • Divisions VII.b-c (West of Ireland) • Division VII.d (eastern English Channel) • Division VII e (western English Channel) • Divisions VII f-g (Bristol Channel, Celtic Sea) • Divisions VII h-k (Celtic Sea South, southwest of Ireland) • Subarea IV (North Sea) and Subdivision 20 (Skagerrak) • Division VIa no ICES advice but plaice do occur there and are fished. <p>Stocks in Divisions VIa and VIIb-c, although covered by TAC, lacked other key elements of a species specific management regime and so were assessed using Productivity Susceptibility Analysis (PSA) under Clause D and passed.</p> <p>Other stocks all have species specific management regimes and were assessed under clause C. In all cases except the stock in Division VII h-k, fishery removals are considered in the stock assessment process and the stock has a biomass above the limit reference point (or proxy) and so pass clause C. In Division VII h-k, the stock is below its proxy limit reference point and so fails clause C1.2.</p> <p>A single TAC covers both divisions VIId and VIIe; management should ensure that fishing opportunities are in line with stock status for each of the stocks in the combined management area in order to ensure that both stocks are exploited sustainably.</p> <p>The EU is finalizing a Multi Annual Plan (MAP) for the Western Waters; ICES provided advice based on their MSY approach. The introduction of this new approach would allow achievement of conservation objectives while, at the same time, permitting elimination of fishing effort limitations meaning that numerous reporting and control obligations would not be required. This will result in a significant reduction of the administrative burden.</p> <p>European plaice is listed of least concern on IUCN Red List of Threatened Species (http://www.iucnredlist.org/details/135690/0; accessed 24 April 2018) and is not listed by CITES.</p> <p>The assessor recommends plaice stocks in Divisions Division VIIa; VII.b-c; VII.d; VII e VII f-g; Subarea IV and Subdivision 20 (Skagerrak) and VIa for continued approval as by-product material under the IFFO RS Standard for by-products but does not recommend approval of the stock in Divisions VII h-k.</p>

Peer Review Comments

The plaice fishery is managed under the EU Common Fisheries Policy (CFP). Annual Total Allowable Catches (TAC) within EU waters are set as laid down in EU Council Regulation 2019/124. Scientific advice is provided by ICES. 8 Divisions under ICES advice are considered in this assessment.

Division VIIa (Irish Sea):

The stock assessment is an age-based analytical assessment which uses landings and discards in the model. The input data includes commercial catch-at-age data and three survey indices. The spawning-stock biomass (SSB) has been increasing since 2012 and is well above MSY B_{trigger}. As fishery removals are considered in the stock assessment process and the stock has a biomass well above the limit reference point this Stock passes clause C.

Divisions VII b-c (West of Ireland):

ICES consider that catches in this area are too low to support the collection of necessary information for an assessment of stock status. Consequently no stock assessment is undertaken, reference points are not defined and stock status is unknown. Landings data, from official landings statistics, is available. Landing in the past 5 years have averaged about 20 tonnes while the latest landing advice was 24 tonnes. Landings are included in the assessment and given that recent catches can be considered negligible the stock passes clause C.

Division VIIId (eastern English Channel):

The stock assessment is an age-based analytical assessment that uses catches in the model and forecast. F has declined since the early 2000s and has been below F_{msy} since 2009. SSB has increased since 2008 and has been above MSY B_{trigger} since 2012. As fishery removals are considered in the stock assessment process and the stock has a biomass well above the limit reference point the Division VIIId stock passes clause C.

Division VIIe (Western English Channel):

Input data includes commercial catch information (international landings, ages and length frequencies from catch sampling) and two survey indices. The spawning-stock biomass (SSB) has increased substantially since 2008, and is currently well above MSY B_{trigger}. As fishery removals are considered in the stock assessment process and the stock has a biomass above the limit reference point the Division VIIe stock passes clause C.

Divisions VII f-g (Bristol Channel, Celtic Sea)

The stock assessment is an age-based analytical assessment but is considered indicative of trends only. Input data includes commercial landings and discards information and two survey indices. F is below F_{msy} proxy and stock biomass is above MSY B_{trigger} proxy. As fishery removals are considered in the stock assessment process and the stock has a biomass above the MSY B_{trigger} proxy the Division VII f-g stock passes clause C.

Divisions VII h-k (Celtic Sea South, southwest of Ireland):

The stock assessment is an age-based analytical assessment, indicative of stock trends. Input data includes commercial landings and commercial tuning index. Discards are not included. Spawning-stock biomass (SSB) has decreased significantly since the 1990s and has been below B_{lim} since 2002. Fishing mortality (F) is highly variable and has been above F_{lim} for the entire time-series. Fishery removals are considered in the stock assessment process however, the stock has a biomass below the proxy limit reference point so the Division VII h-k stock fails clause C.

Subarea IV (North Sea) and Subdivision 20 (Skagerrak):

The stock assessment is an age structure analytical assessment that uses catches in the model and forecast. Input data includes commercial catch, ages and length frequencies from port and observer sampling and six survey indices. Discards are included in the assessment. The spawning-stock biomass is well above MSY Btrigger, and has markedly increased in the past ten years. Since 2009, fishing mortality has been estimated at around Fmsy. As fishery removals are considered in the stock assessment process and the stock has a biomass above the limit reference point the Subarea IV and Subdivision 20 stock passes clause C.

Plaice from division VIa passes Clause D.

The peer Reviewer agrees with the recommendation that plaice stocks in Divisions Division VIIa; VII.b-c; VII.d; VII e VII f-g; Subarea IV and Subdivision 20 (Skagerrak) and VIa should be granted continued approval as by-product material under the IFFO RS Standard for by-products but does not recommend approval of the stock in Divisions VII h-k.

Notes for On-site Auditor

The assessment covers European plaice from the ICES stocks listed above. Division VII h-k stock failed the assessment and so should be separated during processing from IFFO RS approved by-product material.

Species-Specific Results

Category	Species	% landings	Outcome (Pass/Fail)	
Category A			A1	
			A2	
			A3	
			A4	
Category B				
Category C	Plaice <i>Pleuronectes platessa</i> :			
	Subarea IV		PASS	
	VII f-g		PASS	
	VII e		PASS	
	VII d		PASS	
	VII a		PASS	
	VII h-k		FAIL	
Category D	Plaice <i>Pleuronectes platessa</i>			
	VI a		PASS	
	VII b-c		PASS	

[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
Plaice	<i>Pleuronectes platessa</i>	Subarea IV		EU, CFP	C
		Division VII			
		Division VIa		EU, CFP	D
		Division VII b-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		Plaice <i>Pleuronectes platessa</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.	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 7 Fail 1
Clause outcome:			Pass/fail
Evidence The plaice fishery is managed under the EU Common Fisheries Policy (CFP). Annual Total Allowable Catches (TAC) within EU waters are set as laid down in EU Council Regulation 2019/124. Scientific advice is provided by ICES (see Clause C1.1 and C1.2).			
C1.1 and C1.2: ICES Advice:			
Division VIIa (Irish Sea): The stock assessment is an age-based analytical assessment which uses landings and discards in the model. The input data includes commercial catch-at-age data and three survey indices; UK (E&W)-BTS-Q3, NIGFS-WIBTS-Q1, and NIGFS-WIBTS-Q4. .			
The spawning–stock biomass (SSB) has been increasing since 2012 and is well above MSY B _{trigger} (Figure 1). Recruitment (R) continues to fluctuate without an overall trend. Fishing mortality (F) has been rapidly decreasing since 1992 and has been below F _{msy} since 2011. ICES assesses that fishing pressure on the stock is below F _{MSY} , F _{pa} and F _{lim} ; and spawning–stock size is above MSY B _{trigger} , B _{pa} , and B _{lim} . (ICES, 2018a).			
As fishery removals are considered in the stock assessment process and the stock has a biomass above the limit reference point this Stock passes clause C.			

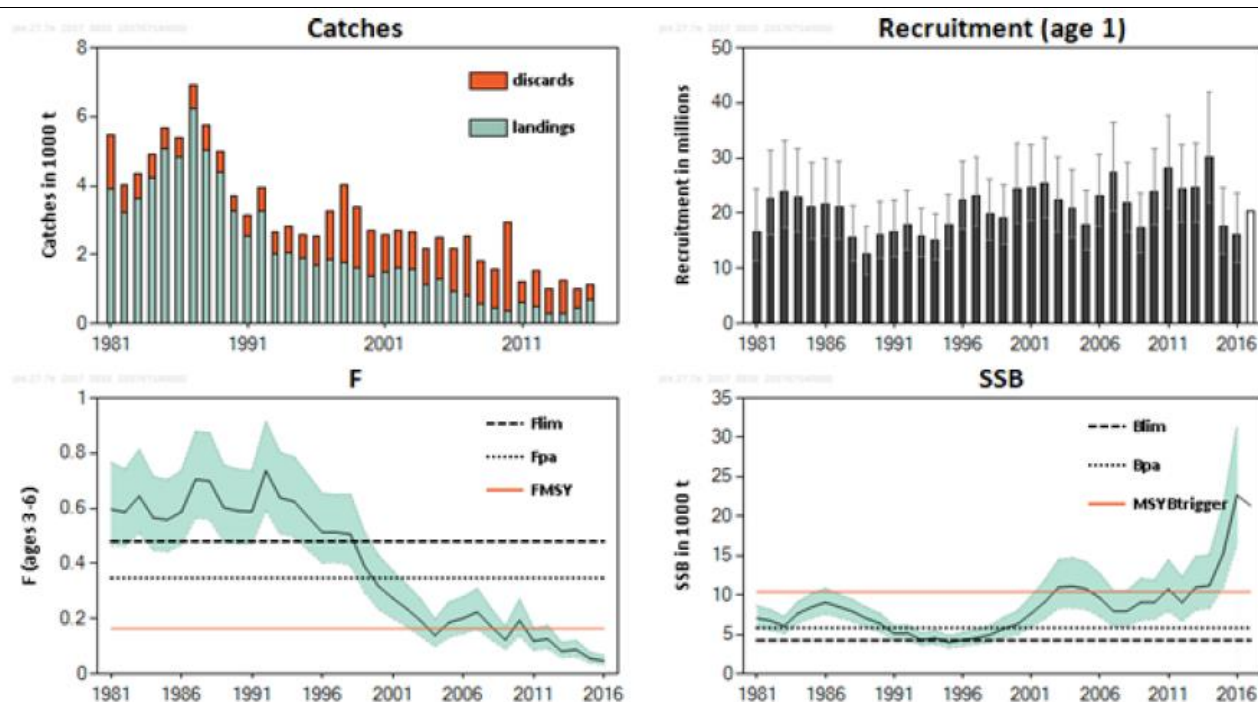


Figure 1. Plaice in Division VIIa. Summary of the stock assessment. Assumed recruitment values are not shaded. Recruitment, F, and SSB have uncertainty boundaries ($2 \times$ standard deviation) in the plot. Source: ICES, 2018a. **R1**

Divisions VII b-c (West of Ireland):

ICES consider that catches in this area are too low to support the collection of necessary information for an assessment of stock status. Consequently no stock assessment is undertaken, reference points are not defined and stock status is unknown. Landings data, from official landings statistics, is available (**Figure 2**) but ICES cannot quantify total catches because recent discard estimates are highly variable and uncertain. Landings since 2000 have been low (ICES, 2017b).

The ICES framework for category 6 stocks was applied (ICES, 2012). For stocks without information on abundance or exploitation, ICES considers that a precautionary reduction of catches should be implemented unless there is ancillary information clearly indicating that the current level of exploitation is appropriate for the stock (ICES, 2017b). Landing in the past 5 years have averaged about 20 tonnes while the latest landing advice was 24 tonnes. Landings are included in the assessment and given that recent catches can be considered negligible the stock passes clause C.

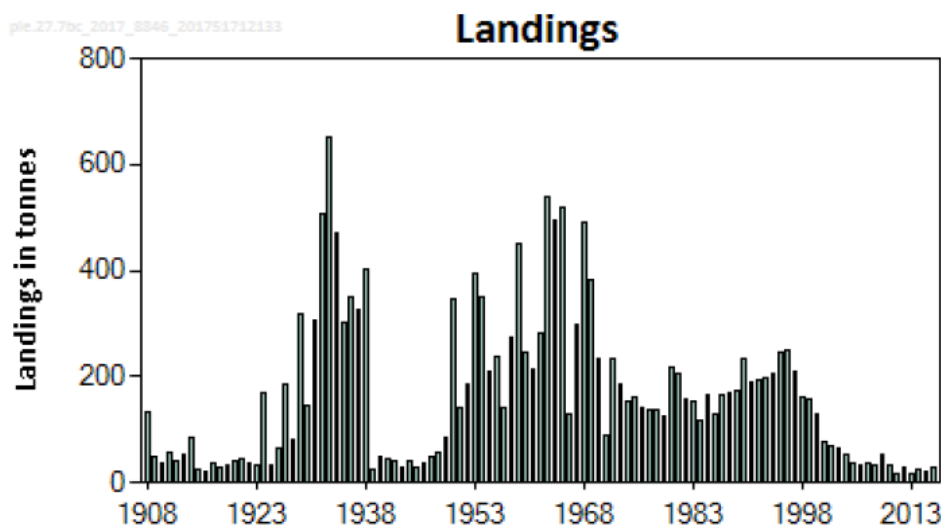


Figure 2. Plaice in Divisions VII b-c. Official landings. Source: ICES, 2017b. **R1**

Division VIIId (eastern English Channel):

The stock assessment is an age-based analytical assessment that uses catches in the model and forecast. Input data includes commercial catch data (international landings, with age frequencies from catch sampling covering 88% of the landings) and two survey indices UK-BTS, FGFS.

F has declined since the early 2000s and has been below F_{MSY} since 2009. SSB has increased since 2008 and has been above $MSY B_{trigger}$ since 2012. Recruitment is currently around the average of the time-series. (Figure 3) (ICES, 2018c).

As fishery removals are considered in the stock assessment process and the stock has a biomass above the limit reference point the Division VIIId stock passes clause C.

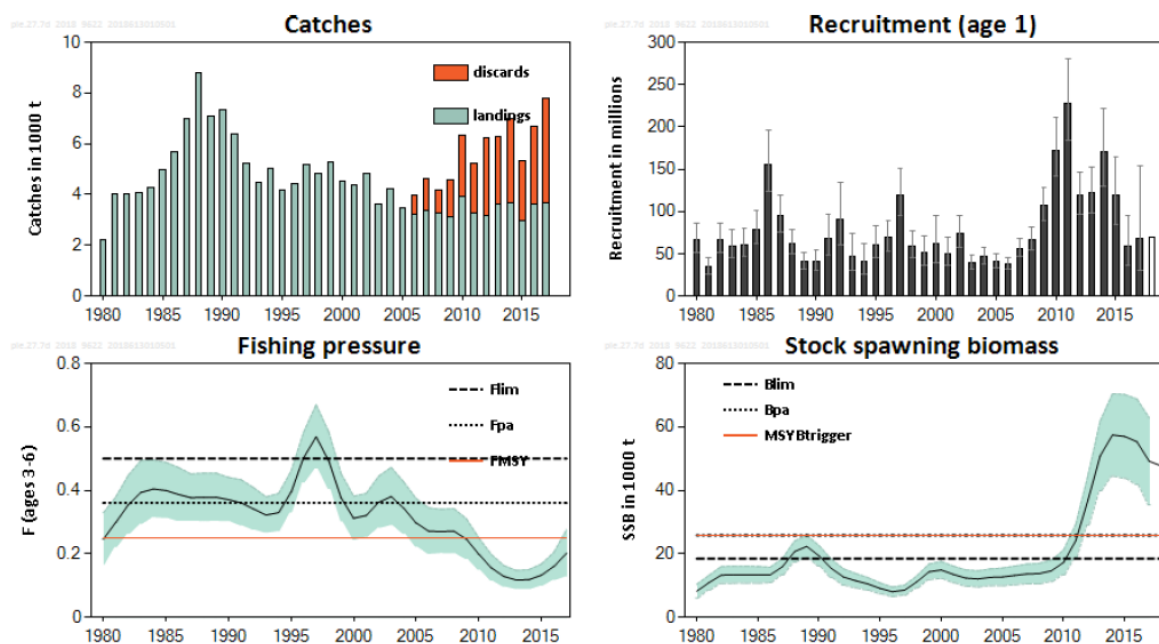


Figure 3. Plaice in Division VIIId. Summary of the stock assessment. Predicted values of recruitment are not shaded. Shaded areas (F, SSB) and error bars (R) indicate ± 2 standard errors (approximately 95% confidence intervals). Source: ICES, 2018c.**R1**

Division VIIe (Western English Channel):

Input data includes commercial catch information (international landings, ages and length frequencies from catch sampling) and two survey indices (UK-FSP and Q1SWBeam). The assessment is indicative of trends. (Figure 4).

Fishing mortality (F) declined substantially after 2007, but has increased again since 2015 and is currently above F_{MSY} . The spawning-stock biomass (SSB) has increased substantially since 2008, and is currently well above $MSY B_{trigger}$. Recruitment has been fluctuating without trend.

As fishery removals are considered in the stock assessment process and the stock has a biomass above the limit reference point the Division VIIe stock passes clause C.

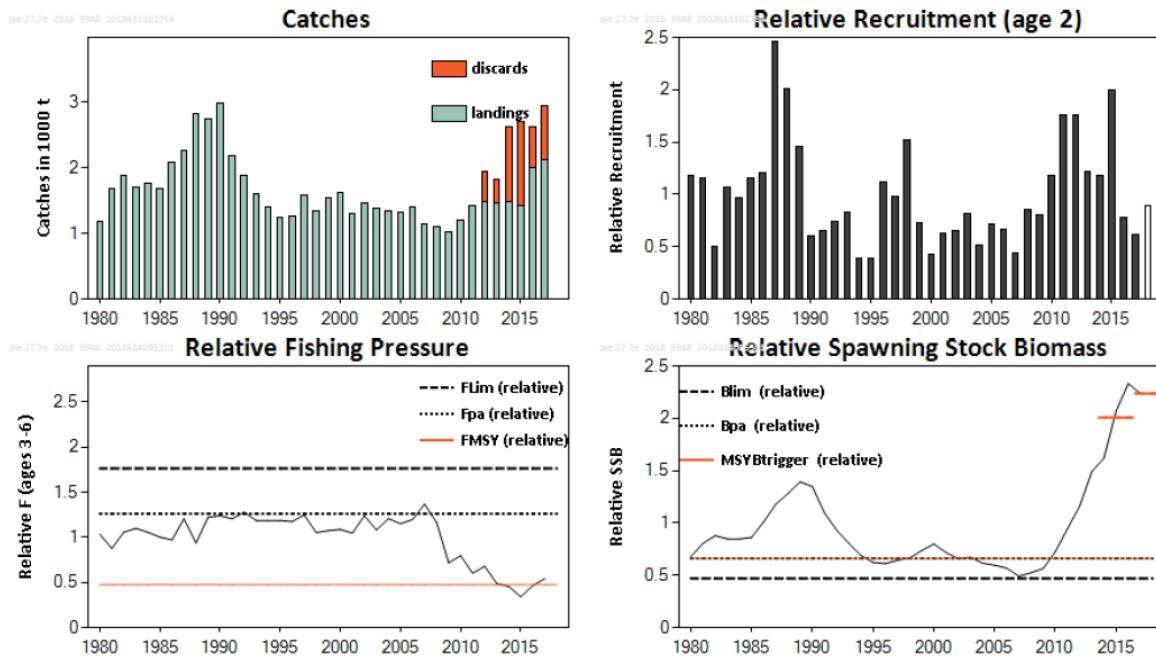


Figure 4. Plaice in Division VIIe. Summary of the stock assessment. Recruitment, fishing pressure, and SSB are relative in relation to the average of the time-series. The dashed lines in the relative SSB plot indicate the average values of the respective years. Discard data are only available for 2012–2016 and are not included in the assessment. Source: ICES, 2018d. **R1**

Divisions VII f-g (Bristol Channel, Celtic Sea)

The stock assessment is an age-based analytical assessment but is considered indicative of trends only (ICES data category 3 stock). Input data includes commercial landings and discards information and two survey indices (UK (E&W)-BTS-Q3, IGFS-WIBTS-Q4).

No reference points are defined for this stock in terms of absolute values but SPiCT-estimated values of the ratios F/F_{MSY} and B/B_{MSY} are used to estimate stock status relative to proxy MSY reference points. F is below F_{msy} proxy and stock biomass is above MSY Btrigger proxy (ICES, 2018e) (**Figure 5, Table 1**):

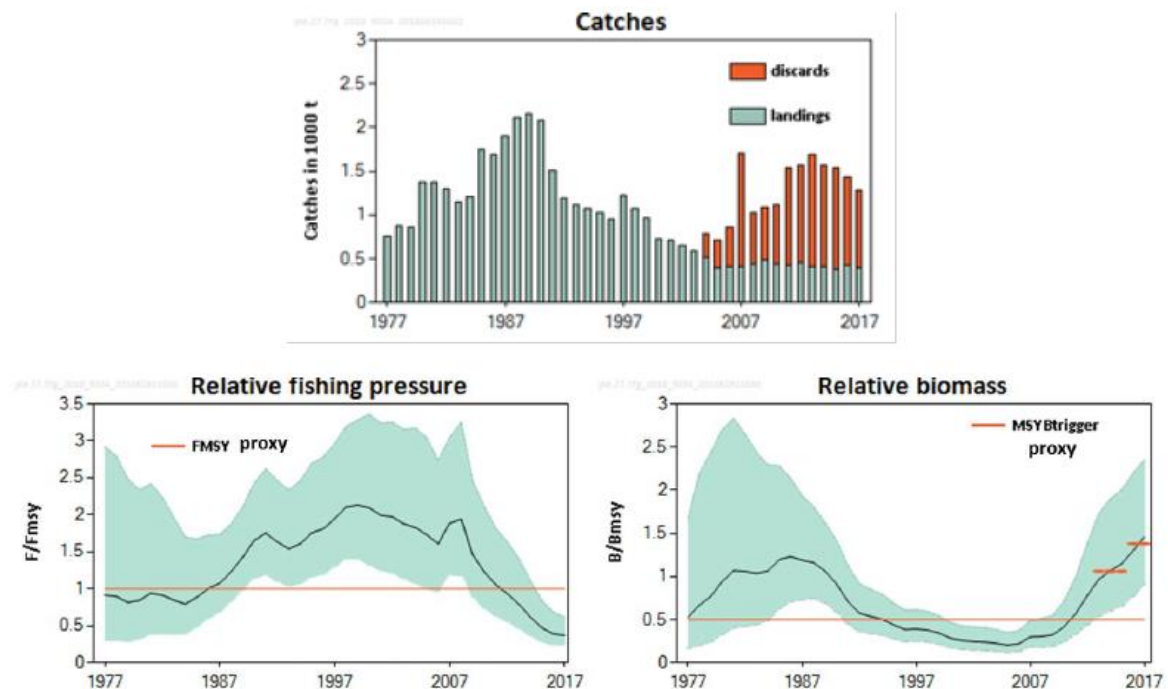


Figure 5. Plaiice in divisions VII f and g. Catches (thousand tonnes). Discards only estimated from 2004. UK (E&W)-BTS-Q3 and IGFS-WIBTS-Q4 survey biomass of plaiice older than or equal to 3 years old. Source: ICES, 2018e. **R1**

ICES assesses that fishing pressure on the stock is below FMSY proxy and biomass is above MSY Btrigger proxy:

Table 1: Plaiice in divisions VII f and g. State of the stock and fishery relative to reference points. **R1**

		Fishing pressure			Stock size		
		2015	2016	2017	2015	2016	2017
Maximum sustainable yield	F_{MSY} proxy	✓	✓	✓ Below proxy	$MSY B_{trigger}$ proxy	✓	✓ Above proxy
Precautionary approach	F_{pa}, F_{lim}	✓	✓	✓ Below possible reference points	B_{pa}, B_{lim}	✓	✓ Above possible reference points
Management plan	F_{MGT}	—	—	— Not applicable	B_{MGT}	—	— Not applicable

The Surplus Production model in Continuous Time (SPiCT) used previously to evaluate stock status is now the basis for this advice (ICES, 2018). Although historical estimates remain uncertain, this year's inclusion of an extended time-series of catch data results in a more realistic and robust assessment of trends in relative B and F.

As fishery removals are considered in the stock assessment process and the stock has a biomass above the proxy limit reference point the Division VII f-g stock passes clause C.

Divisions VII h-k (Celtic Sea South, southwest of Ireland):

The stock assessment is an age-based analytical assessment, indicative of stock trends (ICES data category 3 stock). Input data includes commercial landings (international landings from Divisions VII.j-k, Irish age compositions from landings sampling in 7.j) and commercial tuning index (IRL-VMS-OTB). Discarding is known to take place but cannot be reliably quantified owing to limited sampling therefore are not included (ICES, 2018f).

The assessment is indicative of trends only. Spawning-stock biomass (SSB) has decreased significantly since the 1990s and has been below Blim since 2002. Fishing mortality (F) is highly variable and has been above Flim for the entire time-series. Recruitment decreased until 2003 and has been low since then (**Figure 6**):

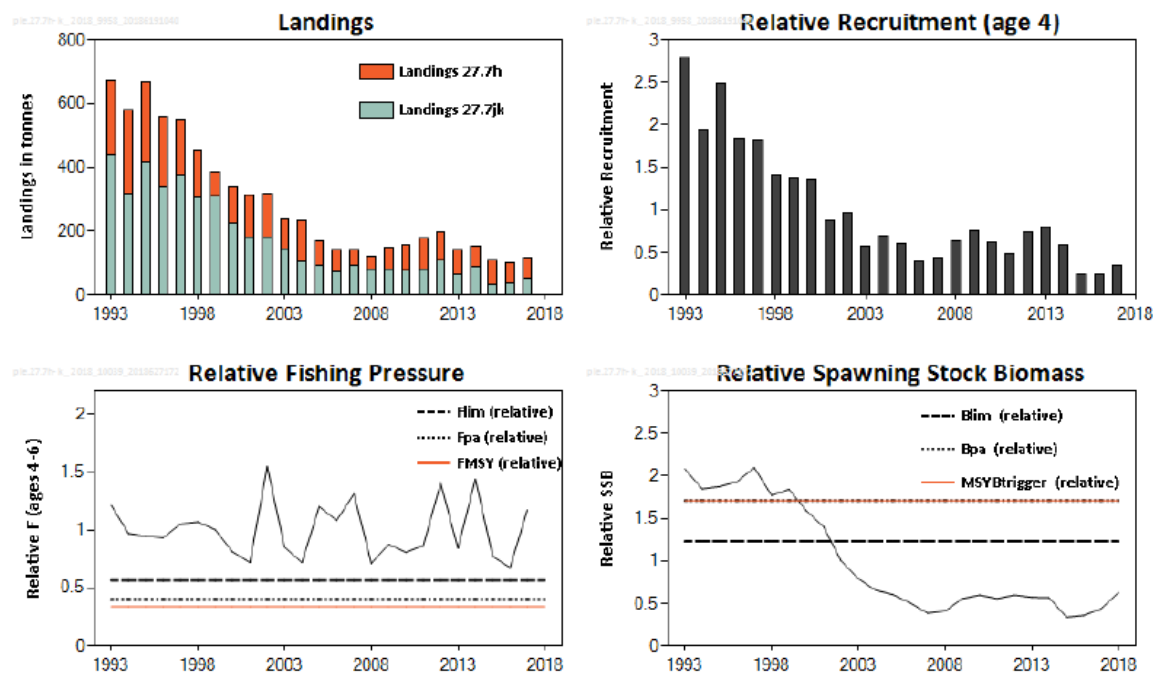


Figure 7. Plaice in Divisions VII .h-k. Summary of the stock assessment. The landings are for the full stock area (divisions 7.h-k), only landings from VII.jk are used in the assessment. Recruitment, F and SSB values are relative to the average of the time-series. Source: ICES 2018f. **R1**

The advice is based on an assessment accepted for trends, used as an indicator of stock size. This is because discards are significant, but not fully quantified. They are not included in the assessment. The apparent reduction in SSB since the mid-1990s is mainly driven by a reduction in abundance of young fish in recent years and high fishing mortality. However, it is unclear whether this lack of young fish in the landings is due to increased discarding or poor recruitment.

Fishery removals are considered in the stock assessment process however, the stock has a biomass below the proxy limit reference point so the Division VII h-k stock fails clause C.

Subarea IV (North Sea) and Subdivision 20 (Skagerrak):

An EU multiannual management plan (MAP) has been proposed for this stock (EU, 2016). This plan is not adopted by Norway, thus, not used as the basis of the advice for this shared stock. ICES was requested by the EC to provide advice based on the MSY approach and to include the MAP as a catch option.

The stock assessment is an age structure analytical assessment that uses catches in the model and forecast. Input data includes commercial catch, ages and length frequencies from port and observer sampling and six survey indices. Discards are included in the assessment, the data series covers the majority of the fleet.

Reference points are defined for the stock. The spawning-stock biomass is well above MSY Btrigger, and has markedly increased in the past ten years. Recruitment has been around the long-term average since the mid-1990s. Since 2009, fishing mortality has been estimated at around Fmsy (**Figure 8** (ICES, 2018g)).

As fishery removals are considered in the stock assessment process and the stock has a biomass above the limit reference point the Subarea IV and Subdivision 20 stock passes clause C:

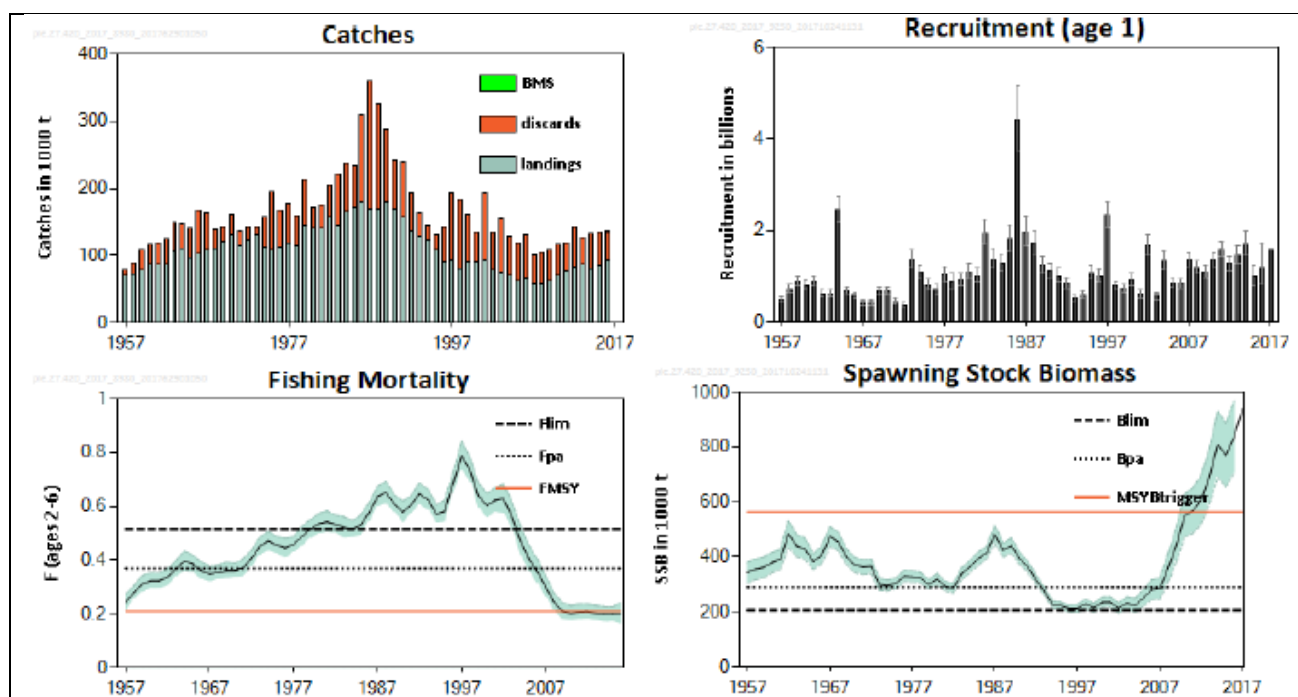


Figure 8. Plaice in Subarea IV and Subdivision 20. Summary of the stock assessment. Shaded areas (F, SSB) and error bars (R) indicate ± 2 standard errors (approximately 95% confidence intervals). Source: ICES, 2018g. **R1**

Division VIa:

Although this stock has a TAC it is assessed under clause D due to the lack of other key elements of a species specific management regime in particular a stock assessment. The species passes Category D (**Table D1, R1,R7**).

Summary:

ICES is requested to further develop advice on mixed fisheries and on biological interactions for the North Sea, Baltic Sea and the Atlantic. This work should include a description of the main mixed fisheries technical interactions and biological interactions known in the Baltic Sea, the North Sea and the Atlantic.

These can be in either the Fisheries Overviews or the Ecosystem overviews (such as those already developed for the Baltic Sea and the North Sea) or alternatively in single stock advice.

This work will also include analysing existing mixed-fisheries models for the North Sea with a view to develop broken-down [separate] models and scenarios for flatfish and roundfish fisheries/fleets.

When published these and other ICES studies will improve knowledge and lead to more robust stock assessments in the future.

IUCN have classified European plaice as a species of least concern (accessed 11.04.19).

R1:

- ICES, 2018a. ICES Advice on fishing opportunities, catch, and effort Celtic Seas Ecoregion. Plaice (*Pleuronectes platessa*) in Division 7.a (Irish Sea). June 2018
<http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/ple.27.7a.pdf>

- ICES, 2017b. ICES Advice on fishing opportunities, catch, and effort Celtic Seas and Oceanic Northeast Atlantic ecoregions Plaice (*Pleuronectes platessa*) in Divisions 7.b–c (West of Ireland). Published 30 June 2017. DOI: 10.17895/ices.pub.3199.
<http://ices.dk/sites/pub/Publication%20Reports/Advice/2017/2017/ple.27.7bc.pdf>
- ICES, 2018c. ICES Advice on fishing opportunities, catch, and effort Greater North Sea Ecoregion. Plaice (*Pleuronectes platessa*) in Division VII.d (eastern English Channel).
<http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/ple.27.7d.pdf>
- ICES, 2018d. ICES Advice on fishing opportunities, catch, and effort Celtic Seas and Greater North Sea ecoregions. Plaice (*Pleuronectes platessa*) in Division VIIe (western English Channel).
<http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/ple.27.7e.pdf>
- ICES, 2018e. ICES Advice on fishing opportunities, catch, and effort Celtic Seas Ecoregion† Plaice (*Pleuronectes platessa*) in divisions VII f and g (Bristol Channel, Celtic Sea).
<http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/ple.27.7fg.pdf>
- ICES, 2018f. ICES Advice on fishing opportunities, catch, and effort Celtic Seas and Oceanic Northeast Atlantic ecoregions. Plaice (*Pleuronectes platessa*) in Divisions VII h–k (Celtic Sea South, southwest of Ireland).
<http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/ple.27.7h-k.pdf>
- ICES, 2018g. ICES Advice on fishing opportunities, catch, and effort Greater North Sea Ecoregion. Plaice (*Pleuronectes platessa*) in Subarea IV (North Sea) and Subdivision 20 (Skagerrak).
http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/2018/ple.27.420_replaced.pdf

R2 EU request on the further development of ICES mixed-fisheries considerations and biological interactions ICES Dec 2018 7pp

http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2018/Special_requests/eu.2018.34.pdf

R3 ICES, 2013. Stock Annex: Plaice (*Pleuronectes platessa*) Divisions VII b–c (West of Ireland).
http://ices.dk/sites/pub/Publication%20Reports/Stock%20Annexes/2015/ple-7b-c_SA.pdf

R4 North Western Waters Multi-annual Plan Proposal: (2018)

Proposal for a Regulation of the European Parliament and of the Council establishing a Multiannual Plan for fish stocks in Western Waters and adjacent waters, and for fisheries exploiting those stocks, amending Regulation (EU) 2016/1139 establishing a multiannual plan for the Baltic Sea, and repealing Regulations (EC) No 811/2004 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018PC0149&from=EN>

R5 ICES (2012) ICES Implementation of Advice for Data-limited Stocks in 2012 in its 2012 Advice. ICES CM 2012/ACOM 68. 42 pp.

R6 IUCN Red List European plaice <https://www.iucnredlist.org/species/135690/55118705>

R7 Fishbase European plaice:

<https://www.fishbase.in/Summary/SpeciesSummary.php?ID=1342&AT=plaice>

Standard clauses 1.3.2.2

CATEGORY D SPECIES

In a whole fish assessment, 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. In a by-product assessment, Category D species are those which are not subject to a species-specific management regime. In both cases, 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.

The process for assessing Category D species involves the use of a Productivity-Susceptibility Analysis (PSA) to further subdivide the species into ‘Critical Risk’, ‘Major Risk’ and ‘Minor Risk’ groups. If there are no Category D species in the fishery under assessment, this section can be deleted.

Productivity and susceptibility ratings are calculated using a process derived from the APFIC document “Regional Guidelines for the Management of Tropical Trawl Fisheries, which in turn was derived from papers by Patrick *et al* (2009) and Hobday *et al* (2007). Table D1 should be completed for each Category D species as follows:

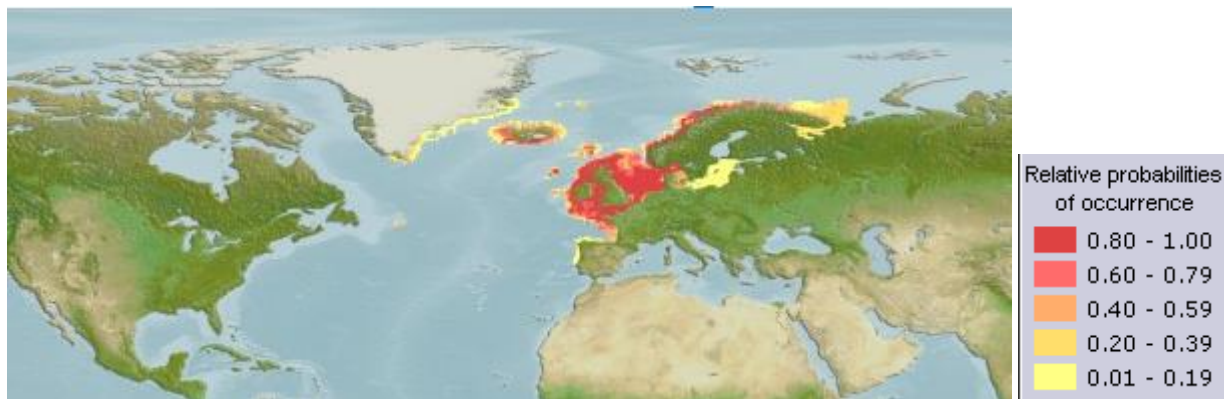
- Firstly, the best available information should be used to fill in values for each productivity and susceptibility attribute.
- Table D2 should be used to convert each attribute value into a score between 1 and 3.
- The average score for productivity attributes and the average for susceptibility attributes should be calculated.
- Table D3 should be used to determine whether the species is required to meet the requirements of Table D4. A species which does not need to meet the requirements of D4 is automatically awarded a pass.
- Table D4 should be used to assess those species indicated by Table D3 to determine a pass/fail rating.
- Any Category D species which has been categorised by the IUCN Red List as Endangered or Critically Endangered, or which appears in the CITES appendices, automatically results in a fail.

D1	Species Name:	Plaice <i>Pleuronectes platessa</i>	
	Productivity Attribute	Value	Score
	Average age at maturity (years)	2.8	2
	Average maximum age (years)	20	2
	Fecundity (eggs/spawning)	50,000-500,000	1
	Average maximum size (cm)	40.0	1
	Average size at maturity (cm)	30.8	2
	Reproductive strategy	Open water / substratum egg scatterers	1
	Mean trophic level	3.2	2
	Average Productivity Score		1.57
	Susceptibility Attribute	Value	Score
	Overlap of adult species range with fishery	>50%	3
	Distribution	Not scored when overlap scored	
	Habitat	Demersal	3
	Depth range	0-200m, usually 10-50m	3
	Selectivity	Up to 4m length	3

	Post-capture mortality	Most dead or retained	3
	Average Susceptibility Score		3
	PSA Risk Rating (From Table D3)		Pass
	Compliance rating		Medium

References

Overlap attribute:



Reviewed distribution maps for *Pleuronectes platessa* (European plaice), with modelled year 2100 native range map based on IPCC A2 emissions scenario. www.aquamaps.org, version of Aug. 2016. Web.

Other attributes: R7

<http://www.fishbase.org/summary/1342>

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		
		1.00 – 1.75	1.76 – 2.24	2.25 – 3.00
Average Productivity Score	1.00 – 1.75	PASS	PASS	PASS
	1.76 – 2.24	PASS	PASS	TABLE D4
	2.25 – 3.00	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			
References			
<i>Standard clause 1.3.2.2</i>			

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.