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MarinTrust Draft V3

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Whole Fish Fishery Assessment

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Criteria, methodology and guidance document

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20 **1. About MarinTrust**

21 **Vision**

22 All marine ingredients produced globally will be sourced from responsibly sourced fisheries
23 products and produced in a safe manner.

24 **Mission**

25 To enable marine ingredient producers to demonstrate to all stakeholders their commitment
26 to responsible practices in the areas of raw material procurement and food/feed safety.

27 **MarinTrust Global Standard**

28 The MarinTrust Global Standard (MarinTrust Standard) and Certification Programme for the
29 Responsible Supply of Fishmeal and Fish Oil was developed with international consultation with
30 stakeholders and meets global best practice guidelines for certification and ecolabelling
31 programs.

32 The MarinTrust Global Standard for responsible supply (MarinTrust Standard) has the following
33 core objectives:

- 34
- To ensure no Illegal, Unreported and Unregulated fishery raw materials are used.
 - 35 • To ensure pure and safe products are produced under a recognised Quality Management
36 System, thereby demonstrating freedom from potentially unsafe and illegal materials.
 - 37 • To ensure full traceability throughout production and the supply chain.
- 38

39 2. Whole Fish Fishery Assessment Methodology

40 Whole fish source fisheries are assessed using a modular assessment process, which awards a pass or fail
41 rating under a number of sections. The precise structure of the assessment report is determined by the
42 nature of the catch in the fishery (species categorisation), utilising different modules for 'target' and 'non-
43 target' species, and for those stocks with or without stock-specific management regimes.

44 Assessment Process

45 Scoring and Assessment Determination

46 The assessor shall score all applicable clauses (i.e. within each module and for each relevant species
47 category) using a binary Pass/Fail score.

48 Throughout the assessment methodology, there are main clauses and sub-clauses. Sub-clauses (where
49 applicable) support the assessor in reaching a conclusion for the main clause.

50 Where there are sub-clauses the main clauses (e.g. M1.1.) are not directly assessed, they are awarded a
51 pass or fail determination based on the fishery under assessment meeting the sub-clauses (E.g. M1.1.1
52 and M1.1.2).

53 The assessor shall document if each sub-clause is met or not met in the template.

54 All relevant main clauses and sub-clauses should be completed, regardless of a possible fail score/rating.

55 To achieve a pass in a main clause, the fishery/species must meet **the majority** of the sub-clauses.

56 Should the majority of sub-classes Fail, then the main clause shall Fail.

57 The clauses should be completed by providing sufficient evidence to justify awarding each clause a pass
58 or fail rating.

59 The assessor should provide a short summary for each main clause stating if the fishery passes or fails
60 the clause and identifying what, if anything, is missing and to what extent this is relevant to the fishery
61 approval. (i.e. it could be more or less impacting based on the fishery circumstance and its
62 management).

63

64 Once the assessor has completed the assessment (i.e. all relevant clauses are assessed), the
65 assessor shall reach a Final Assessment Determination to either approve or not approve the
66 fishery under assessment.

67 The assessor and CB shall use Table 1 to support the assessment determination:

68

69

70

71 **Table 1. Guidance on Assessment Determination.**

Assessment Determination	Guidance
Approved	The whole fish under assessment is Approved for use by a MarinTrust certified site.
Not Approved	The whole fish under assessment is Not Approved for use by a MarinTrust certified site.

72

73 **Example scoring scenarios**

74 To add.

75

76 **3. Guidance to the Whole Fish Fishery Assessment**
 77 **Methodology**

78 The purpose of this document is to provide guidance to the CBs to help interpret the whole fish fishery
 79 assessment methodology, and how to complete the fisheries assessment template. It aims to:

- 80 1. Clarify the requirements of each assessment section.
- 81 2. Recommend determinations based on possible fishery circumstances.
- 82 3. Improve consistency of assessments through examples and definitions.

83

84 It is important to note that the guidance contained within this document is not binding; the approval
 85 decision for the whole fish fishery rests with the certification body and their fishery assessment team.

86 Fishery management has as many variations in approach as there are fisheries, and raw material
 87 sourcing adds additional challenges. This document is not intended to cover all eventualities but rather
 88 provide guidance for assessors. It is intended to remain in development and will be updated as
 89 additional by-products are assessed, and additional scenarios encountered.

90 Note that the format of this document should not be used as a template for conducting the whole fish
 91 fishery assessment.

92 Fishery assessors shall use the **whole fish fishery assessment template** and report the whole fish
 93 fishery assessment outcomes.

94

95

96

97 **4. Evidence and References**

98 The fishery assessor (within evidence section of the whole fish fishery assessment template) shall
99 provide enough information to justify the pass or fail score or level of risk being awarded for each clause.

100 A specific response to each sub-clause should be provided that demonstrates the level of conformity of
101 the fishery under assessment based on the evidence available. The response should be written concisely
102 and provide reference to the available evidence location (e.g., web references). Where no information or
103 evidence is available for a sub-clause or part of a sub-clause this should be stated.

104 Information sources can include:

- 105 • Stock assessments
- 106 • Catch composition data
- 107 • IUCN Red List
- 108 • Management measures
- 109 • Observer reports, etc.

110 References need to be provided under each clause to show the source of all information used.

111 **ALL REFERENCES should be documented**

112 Evidence provided in the assessment should be from reliable sources, such as official government
113 websites, internationally recognised scientific organisations, and NGOs.

114 The reference should include the author, the title of the report, the page number and a hyperlink to the
115 internet source (If applicable).

116 The assessor should make a note if information was not publicly available and was made available on
117 request

118

119 The Certification Body assessment team will provide in the evidence section enough information to justify
120 the pass or fail rating being awarded for each clause. Information should always be from reliable sources,
121 preferably recognised scientific or governmental organisations or NGOs. Fisher information can also be
122 used where it can be objectively verified. References will need to be provided under each clause to show
123 the source of all information used. Fisheries must achieve a pass rating in all applicable sections to achieve
124 approval overall.

125 Where there is an information or evidence deficiency, the fishery assessment team will have two options.

126 **a)** Firstly, the client can be approached directly to provide answers or additional evidence.

127

128 **b)** Secondly, in some cases additional information or evidence can be sought by the on-site auditors
129 during the factory assessment.

130 If there is sufficient information to award the fishery a pass rating under every clause, the fishery should
131 be provisionally approved, and ratings updated when the additional information becomes available.

132 Where information deficiency prevents the assessment of a clause, or leads to an implied fail rating, the
133 fishery should not be approved until additional information is made available to the assessment team.

134

135 5. How to complete the assessment template

136 The whole fish assessment methodology follows a modular approach for the fishery under assessment.

137 The whole fish assessment template follows the whole fish fishery assessment methodology, providing
138 sections and tables to record the assessment details, outcomes of the assessment, supporting evidence
139 and references for each step of the assessment.

140

141 Fishery assessors shall follow this process for completing the template:

142 For ALL ASSESSMENTS, complete Tables 1, 2 and 3: the scope, applicant, CB and assessment
143 determination.

144 Table 3 shall only be completed once the assessor has finished the assessment (i.e. it is the last section
145 completed).

146 Information to complete Tables 1 and 2 are provided by the applicant in the MarinTrust Application form,
147 or is information that the CB provides.

148

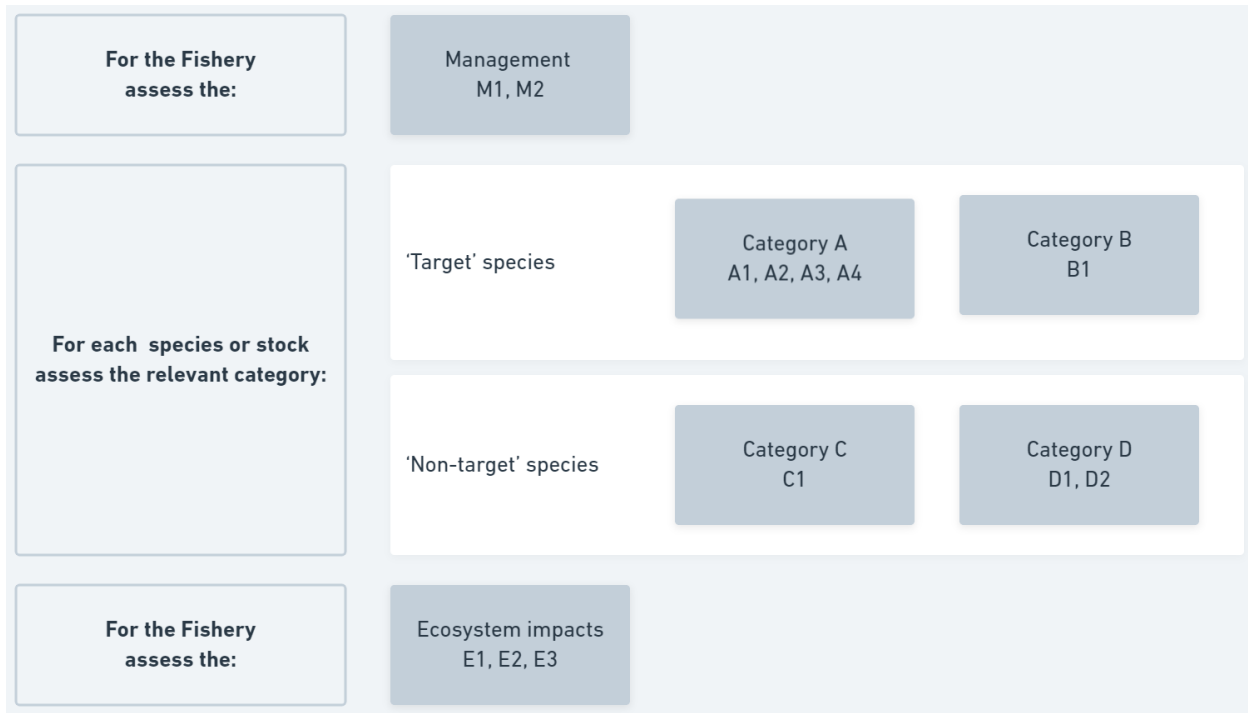
149 For all assessments, the assessor shall follow the following process when completing the whole fish fishery
150 assessment (see Figure 1))

- 151 1. Complete the Species Characterisation table,(table 6 in template) to determine which categories of
152 species are present in the fishery.
- 153 2. Complete clauses M1, M2: Management.
- 154 3. Complete relevant species categorisation assessments
 - 155 a. IF THERE ARE CATEGORY A SPECIES IN THE FISHERY: Complete clauses A1, A2, A3, A4 for
156 **each** Category A species.
 - 157 i. If a Category A species fails, the species shall be re-assessed as Category B species.
 - 158 b. IF THERE ARE CATEGORY B SPECIES IN THE FISHERY: Complete the Section B risk
159 assessment for **each** Category B species, completing Table B1.
 - 160 c. IF THERE ARE CATEGORY C SPECIES IN THE FISHERY: Complete clause C1 for **each** Category
161 C species.
 - 162 i. If a Category C species fails, the species shall be re-assessed as Category D species,
163 EXCEPT if there is evidence that the stock is currently below the limit reference
164 point.
 - 165 d. IF THERE ARE CATEGORY D SPECIES IN THE FISHERY: Complete Section D, completing Table
166 D1 and Table D2.

167 4. Complete clauses E1, E2, E3: Ecosystem Impacts.

168 If there is no species in that Category, the Category can be deleted from the template.

169 If there is more than one (1) species in a category, the assessor shall complete the assessment for each
 170 species. Duplicating the relevant tables in the assessment template.



172
 173 **Figure 1. Illustration of modular assessment process.**

174 6. Information required for all assessments

175 Tables 1, 2 and 3 in the whole fish fishery assessment report template are compulsory and must be
 176 completed in full for all assessments.

177 Most information to complete these tables are provided by the applicant in the Application Form or are
 178 information held by the CB (such as assessor and peer reviewer names).

179 Whole fish fishery report name and report code is generated by MarinTrust secretariat and provided to
 180 the CB.

181 Table 3 shall be completed only when the assessor concludes their assessment. It is the last table to be
 182 completed in the template.

183 **Guidance to support completing Table 1: Whole Fish Fishery Assessment** 184 **Scope**

Required information	Guidance
Fishery under assessment	

Main Species (Common name, Latin name)	Common and Latin name(s) of the Category A and Category species (main species) covered by the assessment.
Fishery Location	Marine region where the fishery is conducted, e.g. ICES area, national EEZ, FAO area, specific coastline.
Management Authority (Country/State)	The country or state/province with primary responsibility for managing the fishery. In assessments where there are multiple relevant management authorities, a separate M section should be completed for each.
Gear type(s)	Gear type(s) used in the fishery under assessment. Where there are multiple gear types, a separate section E shall be completed for each gear type.

185

186 Guidance to support completing Table 2: Application and Assessment 187 Details

Required information	Guidance
Applicant company	There can be more than one applicant for each whole fish under assessment.
Applicant country	This is the country that the applicant sites are situated. There can be more than one applicant country for each whole fish under assessment.
Name of Certification Body	Name of MarinTrust accredited CB completing this assessment.
Fishery Assessor	Name of fishery assessor completing this assessment.
Peer Reviewer	Name of the CB internal peer reviewer.
Report code	MarinTrust issued report code for this by-product.
Assessment date (mm/yyyy)	Month and Year that this assessment was completed

188

189 Guidance to support completing Table 3: Assessment Determination

190 Table 3 is completed at the end of the assessment only.

Required information	Guidance
Approval Validity	Each whole fish assessment is valid for 12 months. The CB must complete the Approval Validity only if the determination is to Approve the whole fish fishery.

	<p>The Approval Validity shall be from the month and year the assessment is completed and end 12 months (1 year) later.</p>
<p>Assessment determination</p>	<p>The CB final determination, the whole fish is either Approved (and Approved, source with caution) or Not Approved. Include additional detail on any areas in which the fishery was awarded a fail rating *see guidance in Section 3 to support assessment determination. Also include in assessment determination summary: a statement summary on each of:</p> <ul style="list-style-type: none"> • Fishery management infrastructure • Catch composition overview • Stock assessment efforts • Other research • Control and enforcement • And other relevant impacts of the fishery • Include additional detail on any areas in which the fishery was awarded a fail rating.
<p>Peer reviewer determination</p>	<p>The CB peer reviewer determination, the whole fish is either Approved/Approved, source with caution/Not Approved. Any additional feedback from the peer reviewer on the accuracy of the assessment decision, the ratings throughout the assessment, and the adequacy of the evidence supporting these.</p>
<p>Notes for on-site auditor</p>	<p>Under some circumstances, there may be areas of the fishery assessment which need to be confirmed during the on-site audit. These could include:</p> <ul style="list-style-type: none"> • Ensure that all landings are monitored and recorded by government officials • Ensure that bycatch is monitored and catch composition is accurate • Ensure that vessels details are recorded at landing. • Ensure flag state(s) are known • Ensure that fishing gear(s) and mesh sizes are known. • This section is for recording any such concerns or requests for the on-site assessor

191

192

193

194 7. Species Categorisation

195 The assessor shall complete **Table 6 Species Categorisation Table** as fully as the available information
 196 permits, using the most relevant information available to the assessor.

197 Catch composition details may be provided by the applicant.

198 In cases where this information is not provided by the applicant the information can be sourced from the
 199 relevant government catch statistics when available on-line. Marine Stewardship Council (MSC) reports
 200 and other fishery data sources can be used and referenced in the 'Species categorisation reference'
 201 section.

202

203 Guidance to support completing Table 5 Species Categorisation Table

Required information	Guidance
Species name (Common and Latin name)	All species should be listed
Stock	Stock name, location. Differentiate when there are multiple biological or management stocks of one species captured by the fishery
IUCN Red List Category	Add categorisation. https://www.iucnredlist.org/
CITES Appendix I or II	Add if listed. Species+ (speciesplus.net) n/a if not listed.
% of landings	The '% of landings' column can include estimated ranges if there is uncertainty of variability in the catch composition
Management	'Yes' or 'No': depending on whether the species is subjected to a stock-specific management regime, as described above.
Category	Category A, B, C or D. depending on information in previous columns and guidance

204

205 Endangered species

206 Whole fish species **cannot** be approved for use as a MarinTrust raw material if the species:

- 207 • Is a marine mammal, reptile, amphibian or bird, or
- 208 • From fisheries that use dynamiting, poisoning and other comparable destructive fishing practices,
209 or
- 210 • Appear in CITES Appendix 1 or 2, or
- 211 • Are categorised as Endangered or Critically Endangered on the IUCN Red List, through a recent
212 stock assessment or other evidence.

213

214 **CITES Species**

215 The assessor shall include if the species is listed on CITES Appendix 1 or 2 using CITES database: Species+
216 (speciesplus.net)

217 Whole fish from a species listed in Appendix 1 or Appendix 2 of CITES shall immediately fail the
218 assessment.

219 If the species is not on CITES Appendix 1 or Appendix 2, it passes this part of the whole fish assessment.

220 **IUCN Red list Category**

221 The assessor shall include the Red List categorisation in the Table. If the IUCN assessment was completed
222 more than 5 years prior to the time of the assessment the assessor shall refer to the most recent stock
223 assessment, ICES advice, current national legislation.

224 The fishery assessor shall review if the species is listed on the IUCN Red List website
225 <https://www.iucnredlist.org/> and which category.
226
227

228 If the species has been evaluated **within the last 5 years** (less than or equal to 5 years) and listed by
229 IUCN (the International Union for Conservation of Nature) under the Red List for the following categories
230 it shall immediately fail the assessment;

- 231 • EXTINCT (E) AND EXTINCT IN THE WILD (EW)
- 232 • CRITICALLY ENDANGERED (CR).
- 233 • ENDANGERED (EN).

234 If the species has been evaluated **within the last 5 years** (less than or equal to 5 years) and listed by
235 IUCN under the Red List for the following categories it is acceptable.

- 236 • VULNERABLE (VU).
- 237 • NEAR THREATENED (NT).
- 238 • LEAST CONCERN (LC).
- 239 • DATA DEFICIENT (DD)

240 If the species listed on the IUCN Red List has **not been evaluated within the last 5 years**, i.e. evaluation
241 was more than 5 years, then the fishery assessor should check if there is a stock assessment for the
242 species. For whole fish fishery assessments, the assessor can assess the species in relevant species
243 categories (A, B, C or D)

244

245 **Species Category: Target species and non-target species: The 95% Rule**

246 Any species representing more than 0.1% of the annual catch should be listed in Table 6, along with an
247 estimate of the proportion of the catch each species represents (% landings)

248 For the purposes of the MarinTrust fishery assessment, 'target' and 'non-target' species are defined by
249 their prevalence in the catch, by weight. The assessor must review the application form and any available
250 landings/catch data from the fishery to determine which species are considered 'target' species in the

251 fishery, and the combined weight of these must be at least 95% of the annual catch. The remaining 5% can
252 be made up of 'non-target' species.

253 The assessor shall provide all references used to clearly show evidence for species categorisation
254 determination.

255 ETP species are considered separately (under Ecosystem Impacts, E1), irrespective of their frequency of
256 occurrence in the catch.

257 Species which make up less than 0.1% of landings do not need to be listed.

258 The table in template should be extended if more space is needed.

259 Discarded species should be included when known.

260

261 The species should then be divided into Type 1 (Target species) and Type 2 (Non-target species) as follows:

- 262 • **Type 1 Species** can be considered the 'target' or 'main' species in the fishery. They make up the
263 bulk of annual landings and are subjected to a detailed assessment.
- 264 • **Type 2 Species** can be considered the 'non-target' species in the fishery. They make up a small
265 proportion of the annual landings and are subjected to relatively high-level assessment.

266 Type 1 Species must represent at least 95% of the total annual catch.

267 Type 2 Species may represent a maximum of 5% of the annual catch.

268 Figure 2 illustrates some scenarios on how catch can be categorised using the '95% rule'.

269 Species are further categorised by the presence or absence of a species-specific management regime in
270 place:

271 The distinction between 'target' and 'non-target' species is made to enable the assessment to consider the
272 impact of the fishery on all the species caught regularly, without requiring a full assessment be conducted
273 for each. Thus 'target' species are subjected to a more detailed assessment, while 'non-target' species are
274 considered more briefly.

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

276 **Category A:** Species-specific management regime in place.

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

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

279 **Category C:** Species-specific management regime in place.

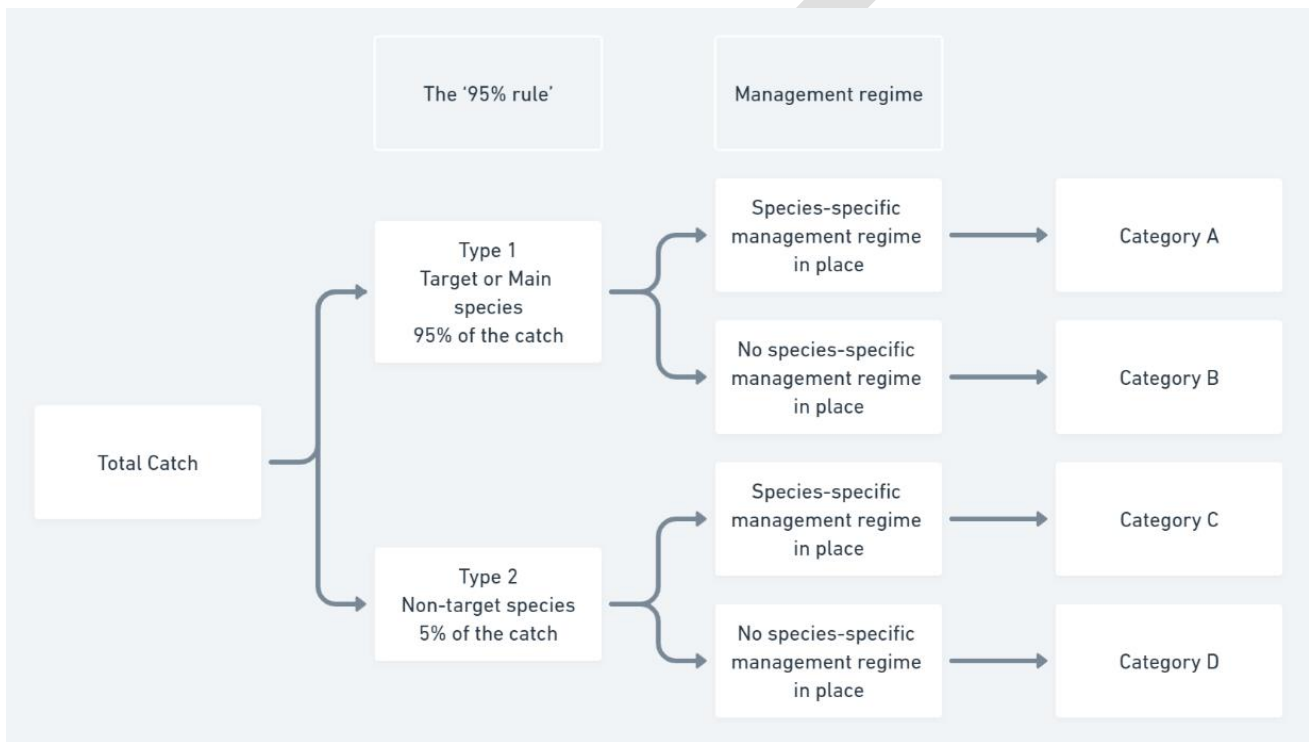
280 **Category D:** No species-specific management regime in place.

281

282 In table 6 species categorisation table, the **'management'** column should be used to indicate whether
 283 there is an adequate management regime specifically aimed at the individual species/stock. In some cases
 284 it will be immediately clear whether there is a species-specific management regime in place (for example,
 285 if there is an annual TAC). In less clear circumstances, the rule of thumb should be that if the species meets
 286 the minimum requirements of clauses A1-A4, an adequate species-specific management regime is in place.

287 After allocating each species to a Species Category, the assessor shall complete the relevant Category
 288 assessment for each species.

289



290

291 **Figure 2. Decision tree to support the species categorisation for Whole fish fishery assessment**

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Figure 2-Total-catch-100%



Figure 3-Total-catch-Type-1:95%,one-species-CAT-B,Type-2:5%-one-species-CAT-D

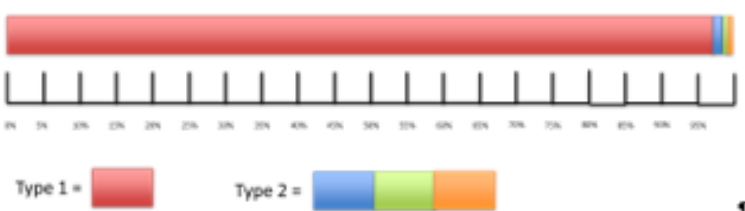


Figure 3-Total-catch-Type-1:95%,one-species-CAT-B,Type-2:5%-one-species-CAT-D

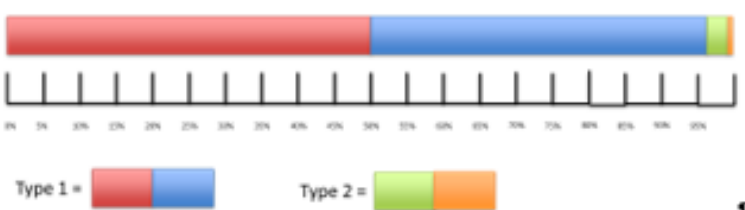


Figure 5-Total-catch-Type-1:97%-1-CAT-A,1-CAT-B,Type-2:3%-1-CAT-C,1-CAT-D

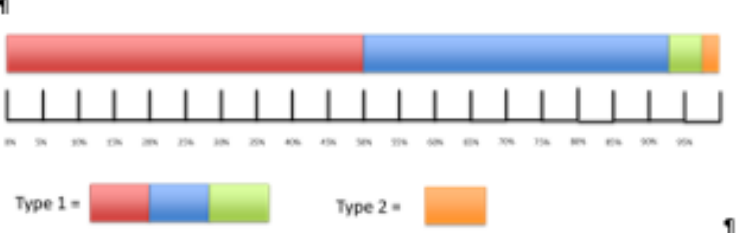


Figure 6-Total-catch-Type-1:2-CAT-A:species,1-CAT-B,Type-2:3%-1-CAT

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295
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Figure 3: examples of how to apply the '95% rule' for categorising species in whole fish fishery assessment.

301 **8. MANAGEMENT**

302 Management module (M1, M2) relates to the general management regime applied to the fishery
 303 under assessment. M1 and M2 are structured into main clauses (e.g. M1.1) and sub-clauses (e.g.
 304 M1.1.1, M1.1.2).

305 The assessor shall assess each sub-clause, determining if the clause is met or not met. If the majority
 306 of sub-clauses are met, the assessor shall award the main clause is then given a Pass rating, if the
 307 majority of sub-classes are not met, the assessor shall award a Fail rating.

308 Evidence must be provided to justify the determinations. References shall be included in the
 309 reporting template.

310 **M1 Management Framework – Minimum Requirements**

Main clause / Sub-clause	Guidance
M1.1 There is an organisation responsible for managing the fishery.	
M1.1.1 The management and administration organisations within the fishery are clearly identified.	<p>Assessors should state who the main management organisation(s) is/are and where it/they were identifiable (e.g. via websites and/or official published information).</p> <p>State if there is evidence of additional departments/organisations that have roles in the management system.</p> <p>Where the stock is transboundary, document the States that conduct fisheries on the same stock, where these are identified and the RFMO/forum under which they co-operate/co-ordinate.</p>
M1.1.2 The functions and responsibilities of the management organisations include the overall regulation, administration, science and data collection and enforcement roles and are documented and publicly available.	<p>Assessors should identify the basic functions and responsibilities with the management system (and reference websites or available documents) including:</p> <ul style="list-style-type: none"> • Overall management responsibility including decision making, administration • Licensing • Science and data collection that are known and available • Enforcement agencies/departments responsible for monitoring and surveillance • International agencies (if relevant) such as RFMO's.
M1.1.3 Fishers have access to information and/or training materials through nationally recognised organisations	<p>Assessors should list websites or other publicly available documents that demonstrate some basic evidence of training such as dissemination of information to fishers.</p> <p>This could include:</p> <p>Posters, guides/manuals, workshops and other training materials to good practice, including advisory information on any licensing or legal requirements, fishing techniques, conservation measures etc.</p>

M1.2 Fishery management organisations are legally empowered to take management actions.	
M1.2.1 There are legal instruments in place to give authority to the management organisation(s) which can include policies, regulations, acts or other legal mechanisms.	<p>Assessors should identify the legal instrument(s) - Acts, Regulations or Policies - and list if they:</p> <ul style="list-style-type: none"> • Are currently enforceable within the governance/administrative and legal framework of the Country/State/Region • Include by definition or jurisdiction (or other implicit reference) the region where the fishery operates • Reference the entity(ies) that has/have been identified as responsible for managing the fishery.
M1.2.2 There is a system for managing fishery entry such as through licensing or permitting.	<p>For Type 1 (target) species (Category A and Category B species), provide evidence of:</p> <ul style="list-style-type: none"> • a system that controls or limits entry to the fishery or • where entry is not limited, there is some other legally enforceable management mechanism that controls fishing effort. <p>Advisory: Economic viability cannot be the sole system for controlling fishing effort.</p>
M1.2.3 The management system has a mechanism in place for the resolution of legal disputes (e.g. to deal with transboundary species issues).	<p>Assessors should consider any evidence of historical disputes in the fisheries managed by the authority and how they were managed. Assessors should also provide evidence of management measures within any RFMOs. The assessment should focus on the impact of disputes on the effectiveness of the management system on sustaining fishery resources.</p> <p>Provide evidence that:</p> <ul style="list-style-type: none"> • Management systems should have mechanisms (continual fishery involvement, effective dialogue, transparent processes and decision making) that work to avoid disputes. • Whether The management system is subject to, and bound by, the national legal system (e.g., national courts) which can be accessed in the event of legal disputes. <p>That (as relevant) transboundary and high seas stocks should have trans-national agreements or RFMO's that can serve to resolve disputes.</p> <p>Advisory: The most common dispute relates to access and the sharing of fishing opportunities (rights and quotas). Whilst all legal disputes relate to management organisation(s), to categorise for assessment purposes, they include:</p> <ul style="list-style-type: none"> • Disputes between different management systems from nations that fish on the same stock (because it is transboundary, straddling, migratory, or has a complex stock structure).

	<ul style="list-style-type: none"> • Disputes between different fishery segments e.g. by gear (pelagic trawl/long-line) or scale (industrial/artisanal/offshore/inshore). • Disputes between single fishing entities and the management organisation (e.g., where sanctions are contested). <p>Examples of dispute resolution by the fishery management authority in other fisheries could be used as evidence.</p>
<p>M1.2.4 The legal framework has fishery specific regulations and rules and can amend/adapt these as required (e.g. quota setting).</p>	<p>Assessors should provide evidence that the management system has sufficient legal basis to amend existing, and implement new, rules so as to adapt to changes in stock levels, fishery practice or ecosystem factors in a timely and effective manner.</p> <p>Examples would include:</p> <ul style="list-style-type: none"> • Mechanisms that implement rules for annual/season quotas. • Mechanisms that implement rules that restrict effort, modify or moderate it, and can close fisheries.
<p>M1.2.5 There is evidence of legal rights of people dependant on fishing for food or livelihood.</p>	<p>Where there is evidence of people dependant on fishing for food or livelihood such as indigenous and artisanal fisheries, assessors should provide evidence that the management system considers the rights of, and commitments to, these citizens including access to information and protecting any established customary rights and/or their long-term interests in sustainably accessing the resource.</p> <p>Where no such indigenous or artisanal fisheries are apparent, the fishery management system should be able to identify for all fisheries and segments that catch fish (e.g. commercial, recreational, incidental etc.).</p>
<p>M1.3 There is an organisation responsible for collecting data and (scientifically) assessing the fishery.</p>	
<p>M1.3.1 The organisation(s) responsible for collecting data and assessing the fishery is clearly identified.</p>	<p>Assessors should identify the main scientific organisation (s) and where it is identifiable (e.g. via websites and/or official published information).</p>
<p>M1.3.2 Data relevant to the management of the fishery is collected consistently and maintained.</p>	<p>Assessors should evidence that data collection is appropriate to the assessments undertaken in the management system, and that data is consistently collected for management purposes and based on a documented approach or set of rules/guides.</p> <p>Data collection can include:</p> <ul style="list-style-type: none"> • Fishery dependent and fishery independent data • Data collected at port from fish landings • Data collected at sea by research vessels or fishing vessels hired/accessed for research purposes

	<ul style="list-style-type: none"> • Data collected from fishing activity recorded by fishers (e.g. fishing logs) • Data from fishery observers • Fish landings by volume reported in consistent units with known levels of accuracy. • Fishing activity expressed in units that are useful for management purposes (e.g., fishing effort). • Stock survey activities that are used to estimate fish stock size, abundance, distribution, structure, catch composition, fishing mortality. • Biological and other life-cycle data (including reproductive status) concerning the health of the stock, natural mortality and ecosystem interactions.
<p>M1.3.3 Evaluation of stock size is conducted through formal assessment approaches with fishery related scientific information documented and publicly available.</p>	<p>Assessors should provide evidence that within the management system there is:</p> <ul style="list-style-type: none"> • a formal, consistent, and recognised approach to assessment of stock size is used. (e.g., EU Regulation 2017/2014 the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy. • Science based information regarding the state of the stock and fishery activity is publicly available
<p>M1.3.4 The management system receives scientific advice regarding stock, non-target species and ecosystem status.</p>	<p>Assessors should provide evidence that formal advice is provided on a regular (e.g., annually), timely basis to coincide with the setting of fishing opportunities, fishing measures/restrictions and other input/output rules that are implemented to effectively regulate the fishery in a sustainable way.</p> <p>Ecosystem status can be considered within context of stock assessment through including data such as:</p> <ul style="list-style-type: none"> • Information on the effects of large-scale climate processes (e.g. El Nino) or climate change. • Information on species habitats and the impacts of fishing on habitats. • predator-prey and other studies that may provide values for important stock assessment parameters like mortality. • time series or physical or environmental data, information.
<p>M1.3.5 Scientific advice is independent from the management organisations and transparent in its formulation through a clearly defined process.</p>	<p>Assessors should provide evidence that Scientific advice is objective and based on the outcome of its analysis of stock and ecosystem health, and not be subject to (political) influence. Science and data collection should be known and accessible.</p>
<p>M1.4 The fishery management system is based on the principles of sustainable fishing and a precautionary approach</p>	

<p>M1.4.1 A policy or long-term management objective for sustainable harvesting based on the best scientific evidence and a precautionary approach is publicly available and implemented for the fishery</p>	<p>Assessors should provide evidence that the policy is described within the management system, either separately or explicit within regulations or other documents. Management objectives may be general for all fisheries but should use best scientific information and the precautionary approach.</p> <p>Reference to a precautionary approach is often within high level objectives that are generic across all fisheries, and while the assessor should provide a link to this, further evidence of implementation in the fishery under MT evaluation should also be presented.</p> <p>Advisory: The precautionary approach shall be interpreted to mean being cautious when information is uncertain, unreliable or inadequate and that the absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures (The UN Fish Stocks Agreement, 1995).</p>
<p>M1.4.2 There is evidence of adaptive management, and it is based on sustainable exploitation.</p>	<p>The assessor should evaluate to what extent the operational objectives documented in A2 (e.g. specific targets, limit reference points) are consistent with the harvest strategy (A3) and adapted as necessary to meet the overall objectives of fishery management.</p> <p>Advisory: Adaptive management could include for example: annual quota setting based on best scientific evidence, move-on rules, mid-season closed areas or early closure of fishery.</p>
<p>M1.5 There is a clearly defined decision-making process which is transparent, with processes and results made publicly available.</p>	
<p>M1.5.1 There is participatory engagement through which fishery stakeholders and other stakeholders can access, provide information, consult with, and respond to, the management systems' decision-making process.</p>	<p>Assessors should provide evidence that management organisation(s) provide fishery stakeholders access to:</p> <ul style="list-style-type: none"> - The evaluation and outcome of scientific stock assessments - Other related evaluations relevant to management decisions <p>Assessors should also provide evidence/recent examples of:</p> <ul style="list-style-type: none"> - The management system consultation processes/mechanism with fishery stakeholders prior to adoption of management decisions - Consultations with relevant non-governmental organisations, such as fishing industry representatives or environmental NGOs, or similar examples of participatory engagement with fishery stakeholder and other stakeholders engaged with decision-making processes.

	<p>Advisory: A defined decision-making process may include a process that is documented in statutes, or some other way described. Evidence of consistent use and recognition by stakeholders also supports the evidence.</p>
<p>M1.5.2 The decision-making process is transparent, with results made publicly available.</p>	<p>Assessors should evaluate that management organisation(s) published information on the decision-making process and on decisions made on government websites or otherwise make them available via representative organisations or at a minimum on request, in a timely fashion.</p>
<p>M1.5.3 The fishery management system is subject to periodic internal or external review to validate the decision-making process, outcomes and scientific data.</p>	<p>Assessors should provide evidence of the management review period (which should be no more than every 5 years) and the organisation responsible for the review.</p> <p>Advisory: The review can consider components of the management system over time and include one or more of:</p> <ul style="list-style-type: none"> - The same or other departments of the management agencies - Other national agencies or organisations within the country - Separate review or audit from a recognised national or international agency - External expert reviewers appointed by the management organisation(s). <p>Note: A2.4 evaluates the external review of the stock assessment.</p>

311

312

M2 Surveillance, Control and Enforcement - Minimum Requirements

Clause / sub-clause	Guidance
<p>M2.1 There is an organisation responsible for monitoring compliance with fishery laws and regulations.</p>	
<p>M2.1.1 There is an organisation responsible for monitoring compliance with specific monitoring, control and surveillance (MCS) mechanisms in place.</p>	<p>Assessors should state who the main organisation (s) responsible for MCS is/are and where it/they were identifiable. This can include a separate department or section of the management organisation or a separately appointed organisation. In all cases, evidence should be provided that the entity is legally mandated to perform the functions of MCS.</p>
<p>M2.1.2 There are relevant tools/mechanisms used to minimise IUU activity.</p>	<p>Assessors should provide evidence that there is both implicit mechanisms within the management system and explicit MCS related tools to deter, detect and prevent IUU and account for IUU fishing mortality in the reporting, stock assessment and management system. This can include:</p> <ul style="list-style-type: none"> - Specific rules for prosecution of IUU fishing activity. - Checks and rules to identify, impound and prosecute the owners of vessels that are IUU blacklisted.

	<ul style="list-style-type: none"> - Checks on the Marin Trust Applicant that they have procedures to identify and avoid catches from IUU vessels. - An evaluation of the risk of IUU in the fishery and its impact on stock and ecosystem health and management.
<p>M2.1.3 There is evidence of monitoring and surveillance activity appropriate to the intensity, geography, management control measures and compliance behaviour of the fishery.</p>	<p>Assessors should provide evidence of the level and type of MCS activity. MCS activity can consist of at sea, at port or other remote monitoring mechanisms. MCS should be used to assess compliance behaviour and establish future management measures needed based on historical compliance behaviour and risk, including:</p> <ul style="list-style-type: none"> - Inspection of landed catches, catch composition and catch documentation from fishers and catches purchased by buyers. - At sea observation through boarding vessels - At sea observation through compliance checks of catches versus landed catches for vessels under review - At sea information provided by scientific observers - Fisher whistle blowing on suspected illegal fishing - Electronic/remote monitoring mechanisms – VMS/AIS/satellite observation - At sea reporting by fishers - Targets for % coverage of the various MCS activities
<p>M2.2 There is a framework of sanctions which are applied when infringements against laws and regulations are discovered.</p>	
<p>M2.2.1 The laws and regulations provide for penalties or sanctions that are adequate in severity to act as an effective deterrent.</p>	<p>Assessors should provide evidence of a framework of sanctions, in the form of fines, penalties or other disincentives exists within the management system and are enforceable by law.</p> <p>Regulations indicate the sanctions for different infringements, including removal of the entitlement to fish.</p> <p>Assessors should identify if the sanctions are graduated in severity based on the severity of offences.</p>
<p>M2.2.2 There is 'no evidence of systematic non-compliance'</p>	<p>Provide evidence that can be in the form of information of sanctions issued and prosecutions administered by the court or legal authority.</p> <p>Where repeat offences occur, sanctions should escalate, or other disincentives issued to deter further offences. The assessor should, where possible, provide examples of cases where the punishment on offending vessels has been executed.</p> <p>The assessor will determine the extent to which these measures are effective, looking in particular for any reports illustrating examples of failed enforcement.</p> <p>Additional evidence for this section can be obtained by on-site auditor, for example ensuring that all landings are monitored or that vessel locations are recorded.</p>

	<p>Can it be determined that fishers comply with all relevant regulations?</p> <p>Do fishers provide additional information to managers to support the effective management of the fishery? This could include voluntarily carrying observers, recording bycatch data, reporting suspected illegal activity, providing operational or economic data?</p>
<p>M2.3 There is substantial evidence of widespread compliance in the fishery, and no substantial evidence of IUU fishing.</p>	
<p>M2.3.1 The level of compliance is documented and updated routinely, statistically reviewed and available (e.g. % infringements by category/segment) and demonstrates widespread compliance in the fishery, relevant to the fleet and segments, and there is evidence of no substantial IUU.</p>	<p>Assessors should document that annual or periodic review(s) are available and describe to what extent MCS is directed by intelligence from previous violations and risk of non-compliance. e.g., Reference to reports illustrating examples of the performance of enforcement.</p> <p>Additional evidence can include, for example, ensuring that all landings are monitored or that vessel locations are recorded.</p> <p>Advisory: Evidence for M2.3.1 may also fulfil M2.2.3.</p>
<p>M2.3.2 Fishers provide additional information and cooperate with managers/enforcement agencies to support the effective management of the fishery.</p>	<p>Assessors should provide evidence of fisher cooperation in supporting activities that support management of the fishery and/or detect and deter IUU such as:</p> <ul style="list-style-type: none"> - Reporting of suspicious vessel activity - Self-monitoring and reporting - Participation in observer programs - Recording additional data on catches/bycatches - Collecting operational/economic data
<p>M2.3.3 The catch recording and reporting system is sufficient for effective traceability of catches per vessel and supports the prevention of IUU.</p>	<p>Assessors should provide evidence that there is a legal requirement to identify by vessel:</p> <ul style="list-style-type: none"> - catch composition/landed catches by species, - quantity of catch, - date of catch, - location of catch (e.g., fishing area), - place of landing, - total catch discharged at each landing, and - the recipient of the landed catches. <p>Advisory: Evidence for this clause may be supported by audits at applicant sites.</p>

314 **9. CATEGORY A SPECIES**

315 This section applies to Category A species. A1 - A4 should be completed for **each** Category A species.
 316 A Category A species must meet the minimum requirements of the clauses before it can achieve a
 317 pass rating. The clauses should be completed by providing sufficient evidence to justify awarding
 318 each of the requirements a pass or fail rating.

319 If the species fails any of these clauses it should be re-assessed as a Category B species.

320

321 **Guidance to support Category A assessment**

Main clause	Guidance
A1. Data Collection - Minimum Requirements	
A1.1 Landings data are collected such that the fishery-wide removals of this species are known.	<p>To attain a pass rating the assessment team should be able to determine whether the research conducted on the fishery stock is sufficiently effective and informed to enable responsible management of the fishery. Stock abundance and removals should be monitored and at least one indicator should be available and monitored with sufficient frequency to support the harvest control rule. Usually, the research will take three forms:</p> <ul style="list-style-type: none"> • fishery dependent (data collected by on-board observers, landings data, discard and by catch data), • fishery independent (trawl, hydro-acoustic and other surveys), and • 'tertiary' (other research, not necessarily directly fishery related, which contributes to the understanding of the biology and ecology of the target species and associated organisms).
A1.2 Sufficient additional information is collected to enable an indication of stock status to be estimated.	<p>Relevant information related to the stock structure, stock productivity and fleet composition is available to support the harvest strategy. Key sources of this information could be;</p> <ul style="list-style-type: none"> • The stock assessment and any background documents such as benchmark assessments. • The management plan, in particular where it details the monitoring and data collection requirements. • Any legislation which details the approach to data collection or monitoring requirements. • Evaluations of the HCR or harvest strategy. • Research plan. Scientific papers,
A1 References	<ul style="list-style-type: none"> • The stock assessment and any background documents such as benchmark assessments.

	<ul style="list-style-type: none"> • The management plan, in particular where it details the monitoring and data collection requirements. • Any legislation which details the approach to data collection or monitoring requirements. • Evaluations of the HCR or harvest strategy. • Research plan • Scientific papers
A2 Stock Assessment - Minimum Requirements	
A2.1 A stock assessment is conducted at least once every 3 years (or every 5 years if there is substantial supporting information that this is sufficient for the long-term sustainable management of the stock), and considers all fishery removals and the biological characteristics of the species.	<p>The assessment team should ensure that the stock assessment is appropriate for the stock and for the harvest control rule.</p> <p>Is the stock assessment a one-off, or will it continue to be carried out at appropriate intervals such as 3 or 5 years?</p> <p>Given the scale and intensity and operational practices of the fishery, is the assessment appropriate to provide managers with reliable understanding of the effectiveness of the harvest strategy?</p> <p>Key sources of information:</p> <ul style="list-style-type: none"> • The stock assessment and any background documents such as benchmark assessments. • The management plan, in particular where it details the monitoring and data collection requirements. • Any legislation which details the approach to data collection or monitoring requirements. • Evaluations of the HCR or harvest strategy. • Research plan • Scientific papers
A2.2 The assessment provides an estimate of the status of the biological stock relative to a reference point or proxy.	<p>To meet the requirements of this clause the assessment must estimate stock status relative to generic reference points appropriate to the species category.</p>
A2.3 The assessment provides an indication of the volume of fishery removals which is appropriate for the current stock status.	<p>Harvest Control Rules are in place or are available that are expected to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.</p>
A2.4 The assessment is subject to internal or external peer review.	<p>The assessment of the stock status is subject to peer review. Key sources of information include:</p> <ul style="list-style-type: none"> • Any internal or external peer reviews of the stock assessment. • Any policy or regulatory documents detailing the process of peer review.

	<ul style="list-style-type: none"> The fishery management plan, should this detail the process of stock assessment peer review.
A2.5 The assessment is made publicly available.	<p>Fishery performance data (stock assessments and management advice etc.) are these widely communicated and available?</p> <p>If the stock assessment cannot be easily obtained, the species should be awarded a Fail rating against this requirement.</p>
A2 References	<ul style="list-style-type: none"> The stock assessment report Background documents, such as benchmark assessment Science working group papers Any internal or external peer review of the stock assessment Published literature demonstrating the appropriateness of the assessment. Management plans, defining how the HCRs will be applied Any evaluations of the HCR Any policy or regulatory documents detailing the process of peer review
A3 Harvest Strategy - Minimum Requirements	
A3.1 There is a mechanism in place by which total fishing mortality of this species is restricted.	<p>There is a harvest strategy that is expected to achieve stock management objectives. Assessment is by a direct comparison of scientific advice against the published fishing quota. The assessment team will also consider final landings data and compare this to the initial scientific advice.</p> <p>The assessment should consider all historical data but can meet this clause as long as the fishery removals meet the requirements outlined in A3.2.</p>
A3.2 Total fishery removals of this species do not regularly exceed the level indicated or stated in the stock assessment. Where a specific quantity of removals is recommended, the actual removals may exceed this by up to 10% ONLY if the stock status is above the limit reference point or proxy.	<p>Harvest control rules should be in place or available that are expected to reduce the exploitation rate as the point of recruitment impairment is approached.</p> <p>Key sources of information:</p> <ul style="list-style-type: none"> Legislation, regulations or licensing arrangements relating to the HCRs. Management plans, defining how the HCRs will be applied Monitoring and management tools are in place to ensure that the exploitation rate could and would be reduced in the event of a decline in stock status, approaching the PRI.
A3.3 Commercial fishery removals are prohibited when the stock has been	<p>Management measures should specify the actions to be taken in the event that the status of the stock under consideration drops below levels consistent with achieving management objectives that allow</p>

<p>estimated to be below the limit reference point or proxy (small quotas for research or non-target catch of the species in other fisheries are permissible).</p>	<p>for the restoration of the stock to such levels within a reasonable timeframe.</p> <p>Note that all advice in this section is subject to the interpretation of all available evidence. Some states issue small quotas for scientific research purposes even when the advice is for fishery closure. Fisheries with quotas which have historically been significantly above advice may achieve a pass rating if there is a long-term plan under implementation which is making significant reductions in landings each season. The final determination is the decision of the assessment team and the guidance above is not binding.</p>
<p>A3 References</p>	<p>References</p> <ul style="list-style-type: none"> • The stock assessment report for the fishery • The fishery management plan and the HCR • The fishery technical regulations (Landings and effort restrictions, technical conservation measures) • Legislation, regulations or licencing arrangements relating to the HCRs • Management plans, defining how the HCRs will be applied • Any specific recovery or rebuilding plan or strategy
<p>A4 Stock Status - Minimum Requirements</p>	
<p>A4.1 The stock is at or above the target reference point, OR IF NOT:</p> <p>The stock is above the limit reference point or proxy and there is evidence that a fall below the limit reference point would result in fishery closure OR IF NOT:</p> <p>The stock is estimated to be below the limit reference point or proxy, but fishery removals are prohibited.</p>	<p>The clause is awarded a pass when the stock is estimated to be above the limit reference point or proxy, or there is evidence that a fall below the limit reference point or proxy would result in the fishery closure.</p> <p>A Fail is awarded if the stock is below the limit reference point and fishing is occurring with no evidence of stock rebuilding within a specified timeframe.</p> <p>The assessor will consider the biology of the species and the scale and intensity of the fishing and the management system and other relevant issues over which to judge fluctuations.</p> <p>Proxy indicators and reference points used must be justified as reasonable indicators of stock biomass by the assessor.</p> <p>Recent trends in fishing mortality rate may be used as a means of scoring stock status. The assessor must provide evidence that F has been low enough for long enough to ensure that the required biomass levels are now likely to be met.</p>
<p>A4 References</p>	<ul style="list-style-type: none"> • Stock assessment reports • Benchmark assessments • Management plans

323 10. CATEGORY B SPECIES

324 Category B species are those which make up greater than 5% of landings in the fishery under
325 assessment, but which are not subject to a species-specific research and management regime
326 sufficient to pass all Category A clauses. A Category B species must be demonstrated to be a low risk
327 to achieve a pass rating. Sufficient evidence must be provided to justify awarding the species a pass
328 or fail rating.

329 **Category B species are assessed using a risk-based approach. The following process should**
330 **be completed once for each Category B species.**

331 Category B species are “unmanaged” and as such will generally not have a stock assessment
332 available, and so much of the information required for the assessment may be unavailable. As an
333 absolute minimum, a Category B species must have some indication of the long-term biomass
334 trends, perhaps in the form of survey biomass trends or research/commercial CPUE indices, and
335 the majority will require an indication of fishing mortality trends or indices. Category B species
336 without any of this information must be awarded a Fail rating, as per Table B(b). If resilience for a
337 given species is not available in the FishBase database it should be calculated based on the
338 methodology explained below.

339

340 This clause should be assessed by utilising the available information and applying it to the method
341 detailed in either Table B(a) or Table B(b). An explanation of the table used, the evidence applied,
342 and the outcome should then be provided in the template.

343

344 • **If there are estimates of biomass (B), fishing mortality (F), and reference**
345 **points**

346 It is possible for a Category B species to have some biomass and fishing mortality data available.
347 When sufficient information is present, the assessor shall use the risk matrix in Table B(a) to
348 determine whether the species should be recommended for approval.

349 In Table B(a), proxies of reference points are acceptable. The ‘long term average’ for the stock
350 biomass and fishery fishing mortality should be estimated using an approach appropriate to the
351 stock under assessment. This will generally be the mean of all available stock data.

352

353 • **If the biomass / fishing pressure risk assessment is not possible**

354 Initially, the resilience of each Category B species to fishing pressure should be estimated using the
355 American Fisheries Society procedure described in Musick, J.A. (1999). This approach is used as the
356 resilience values for many species and stocks have been estimated by FishBase and are already
357 available online ([FishBase : A Global Information System on Fishes](#)). Details of this methodology is
358 provided in Box 1.

359 Determining the resilience provides a basis for estimating the risk that fishing may pose to the long-
 360 term sustainability of the stock.

361 Table B(b) should be used to determine whether the species can pass Category B assessment. The
 362 outcome of the Category B assessment is recorded in the Whole Fish Fishery Assessment Template,
 363 the assessor shall award a pass/fail outcome to each Category B species assessed.

364

365 The assessor shall apply the risk matrix in Table B(a) when assessing a Category B species when
 366 Estimates of Fishing mortality (F), Biomass (B) and reference points are available.

367 **Table B(a) – Biomass/fishing pressure risk assessment.**

368 The assessor shall apply the risk matrix in Table B(a) when assessing a Category B species when
 369 Estimates of Fishing mortality (F), Biomass (B) and reference points are available.

Biomass is above MSY / target reference point	Pass	Pass	Pass	Fail	Fail
Biomass is below MSY / target reference point, but above limit reference point	Pass, but re-assess when fishery removals resume	Pass	Fail	Fail	Fail
Biomass is below limit reference point (stock is overfished)	Pass, but re-assess when fishery removals resume	Fail	Fail	Fail	Fail
Biomass is significantly below limit reference point (Recruitment impaired)	Fail	Fail	Fail	Fail	Fail

	Fishery removals are prohibited	Fishing mortality is below MSY or target reference point	Fishing mortality is around MSY or target reference point, or below the long-term average	Fishing mortality is above the MSY or target reference point, or around the long-term average	Fishing mortality is above the limit reference point or above the long-term average (Stock is subject to overfishing)
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370

371 The assessor shall apply the risk matrix in Table B(b) when assessing a Category B species when no
372 reference points are available.

373 **Table B(b) – Biomass resilience ratings, assessing Category B species when no reference**
374 **points available.**

375 **Key: B = current biomass; B_{av} = long-term average biomass; F = current fishing mortality;**
376 **F_{av} = long-term average fishing mortality.**

B > B_{av} and F < F_{av}	Pass	Pass	Pass	Fail
B > B_{av} and F or F_{av} unknown	Pass	Pass	Fail	Fail
B = B_{av} and F < F_{av}	Pass	Pass	Fail	Fail
B = B_{av} and F or F_{av} unknown	Pass	Fail	Fail	Fail
B > B_{av} and F > F_{av}	Pass	Fail	Fail	Fail
B < B_{av}	Fail	Fail	Fail	Fail
B unknown	Fail	Fail	Fail	Fail
Resilience	High	Medium	Low	Very Low

377 **References for assessing Category B species:**

- 378 • FishBase – A Global Information System on Fisheries: FishBase.org
- 379 • Management measures
- 380 • Time series of catch and effort
- 381 • Ecosystem descriptions
- 382 • Life history characteristics providing indications of species productivity, vulnerability and
- 383 susceptibility to capture.
- 384 • Observer reports

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389 **Box 1 Determining Resilience Ratings in Category B**

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>

391 **11. CATEGORY C SPECIES**

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

395 C1 should be completed for **each** Category C species.

396

397 **Guidance to support Category C assessment**

Clause	Guidance
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.	<p>Stock assessments rarely specify if fishery removals are negligible. Here the assessor must look for evidence such as management measures being implemented for stock rebuilding and that the management measures are not contradicting scientific advice.</p> <p>Examples of management measures: reduction in landings and effort, may also include increased landing controls, technical measures (such as gear modification or changes to minimum landing sizes) or spatial or temporal closures.</p>
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.	<p>The stock should be assessed in terms of the overall outcome objectives i.e to pass this clause there should be evidence that the stock status is above the point at which there is an appreciable risk that recruitment is impaired and will be at or above Blim.</p> <p>Where historical estimates of stock size and resulting recruitment are available, the PRI may be identifiable as the point below which reduced recruitment has been observed in the past, and above which recruitment appears to be more related to environmental factors than to stock size.</p> <p>The standard requires that management measures specify the actions to be taken in the event that the status of the stock under consideration drops below levels consistent with achieving management objectives that allow for the restoration of the stock to such levels within a reasonable time frame. This requires the specification in advance of decision rules that mandate remedial management actions to be taken if target reference points are exceeded and/or limit reference points are approached or exceeded or the desired directions in key indicators of stock status are not achieved. For example, decreasing fishing mortality (or its proxy) if the stock size approaches its limit reference point. This is a central component of the Precautionary Approach.</p> <p>Default values for the levels of the PRI and BMSY, as used in scoring the stock status are given below. They are often related to B0, the stock status that would be present in the absence of fishing.</p>

	<ul style="list-style-type: none"> • In the case where neither BMSY nor the PRI are analytically determined, the following default reference points may be appropriate for measuring stock status depending on the species: $BMSY=40%B_0$; $PRI=20%B_0=1/2BMSY$. • In the case where either BMSY or the PRI are analytically determined, those values should be used as the reference points for measuring stock status unless additional precaution is sought. • In the case where BMSY is analytically determined to be greater than $40%B_0$, and there is no analytical determination of the PRI, the default PRI should be $1/2BMSY$. This case covers the situation of low productivity stocks, where higher default PRIs may be justified. • In the case where BMSY is analytically determined to be lower than $40%B_0$ (as in some highly productive stocks), and there is no analytical determination of the PRI, the default PRI should be $20%B_0$ unless $BMSY < 27%B_0$, in which case the default PRI should be $75%BMSY$. • For stocks with average productivity, where BMSY is not analytically determined but assumed to be $40%B_0$ and a management trigger reference point is set greater than $40%B_0$ for precautionary reasons, the default PRI should still be set at $20%B_0=1/2BMSY$ unless it is analytically determined. This covers situations where the management authority has deliberately chosen a conservative target reference point, but where the default PRI is still appropriate. • In cases where the PRI is set at $20%B_0$, a default value for the BMSY may be assumed to be $2xPRI$. In other cases, for instance where the PRI is set at the lowest historical biomass, it cannot be assumed that $BMSY = 2xPRI$. Teams shall justify any reference point used as a proxy of BMSY in terms of its consistency with BMSY. <p>The default PRI values given above ($1/2BMSY$ or $20%B_0$) apply to stocks with average productivity. Such points are generally consistent with being above the point at which there is an appreciable risk that recruitment is impaired, though for some short-lived stocks the actual point at which there is an appreciable risk that recruitment is impaired may be lower than $20%B_0$ and for some long-lived species it may be higher than this.</p>
<p>C1 References</p>	<p>References</p> <ul style="list-style-type: none"> • Catch composition data • Stock assessments • Management measures for any stocks shown to be depleted <p>Evidence that the fishery is not hindering the recovery of the species below the PRI, such as evidence indicating a lack of gear interaction, or evidence pointing to an unrelated cause (or fishery) limiting recovery.</p>

399 CATEGORY D SPECIES

400 Category D species are those which make up less than 5% of landings and are not subject to a
401 species-specific management regime. In the case of mixed trawl fisheries, Category D species may
402 make up the majority of landings. The comparative lack of scientific information on the status of the
403 population of the species means that a risk-assessment style approach must be taken.

404 The process for assessing Category D species involves the use of a Productivity-Susceptibility
405 Analysis (PSA) to further subdivide the species into 'Critical Risk', 'Major Risk' and 'Minor Risk'
406 groups. A PSA measures, using predetermined attributes, the vulnerability of a species to the
407 impacts from fishing.

408 Productivity and susceptibility attributes and scores are calculated using a PSA methodology taken
409 from the Marine Stewardship Council (MSC), See MSC Fisheries Standard Toolbox v1.0 (date of
410 issue 26 October 2022).

411 Any Category D species which has been categorised by the IUCN Red List as Endangered or
412 Critically Endangered, or which appears in the CITES appendices 1 or 2, automatically results in a
413 fail.

414

415 Table D1 should be completed in the Whole Fish Fishery Assessment template for each Category
416 D species as follows:

417 • The assessor shall use the best available information to fill in values for each productivity
418 and susceptibility attribute.

419 • The assessor shall use Table D(a) to convert each Productivity attribute value and each
420 Susceptibility attribute value into a score between 1 and 3 (this is the risk rating provided
421 in Table D(a).

422 • The assessor shall calculate the average score for productivity attributes and the average
423 for susceptibility attributes and record this in Table D1 in the reporting template.

424 • If information cannot be found for an attribute on Fishbase.org or any other reliable source,
425 then this value is described as unknown, and the score is not factored into the average
426 productivity.

427 • Where there is uncertainty affecting the assessor's decision when scoring the susceptibility
428 attributes this should be noted in Table D1.

429 • The assessor shall then use Table D(b) to calculate an overall PSA risk rating for the
430 Category D species under assessment.

431 ○ The outcome of the PSA risk rating can be either:

432 ■ The Risk Rating is Low and the species passes the Category B assessment,
433 or

- 434 ▪ The Risk Rating is Higher, and the assessor shall complete additional
 435 checks to assess the vulnerability of the Category B species to the impacts
 436 of fishing.
- 437 ○ The assessor shall record the outcome of the PSA Risk Rating in Table D1.
- 438 • If the assessor is required to complete additional checks (i.e. fails to pass Risk Rating in
 439 Table D(b)) then the assessor shall complete Table D2, assessing if the species meets the
 440 clauses D2.1 and D2.2.
- 441 • If the species meets the criteria, the assessor shall give overall clause outcome as Pass. If
 442 the species fails to meet the criteria, the assessor shall give the overall clause outcome as
 443 Fail.

444 **Table D2(a) - Productivity Susceptibility Analysis (PSA) and scores.**

PSA productivity attributes and scores for fish and invertebrates			
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
Density dependence (to be used when scoring invertebrate species only)	Compensatory dynamics at low population size demonstrated or likely	No depensatory or compensatory dynamics demonstrated or likely	Depensatory dynamics at low population sizes (Allee effects) demonstrated or likely.
PSA susceptibility attributes and for fish and invertebrates			
Susceptibility attributes	Low susceptibility (Low risk, score = 1)	Medium susceptibility (medium risk, score = 2)	High susceptibility (high risk, score = 3)
Areal overlap (availability) =	<10% overlap	10-30% overlap	>30% overlap

Overlap of the fishing effort with a species concentration of the stock			
<p>Encounterability</p> <p>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</p>	Low overlap with fishing gear (low encounterability).	Medium overlap with fishing gear.	High overlap with fishing gear (high encounterability). Default score for target species
<p>Selectivity of gear type</p> <p>Potential of the gear to retain species</p>	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.
<p>Post-capture mortality (PCM)</p> <p>The chance that, if captured, a species would be released and that it would be in a condition permitting subsequent survival</p>	Evidence of majority released post-capture and survival. >66% of animals are returned alive and survive the encounter. Where observers can verify that >66% are released alive in combination with a high risk score for selectivity, the PCM score may be reduced to a low risk score (1).	Evidence of some released post-capture and survival. 33-66% of animals are returned alive and survive the encounter. Where observers can verify that 33-66% are released alive in combination with a high risk score for selectivity, the PCM score may be reduced to a medium risk score (2).	Retained species or majority dead when released.

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450 **Table D(b) PSA Risk Rating table.**

	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	Further checks – criteria in Table D2
	2.25 - 3	PASS	Further checks – criteria in Table D2	Further checks – criteria in Table D2

451 **Guidance to support completing Table D2**

Clause	Guidance
D2 Impacts On Species Categorised as vulnerable through the PSA.	
D2.1 The potential impacts of the fishery on this species are considered during the management process, and reasonable measures are taken to minimise these impacts.	<p>Is there a quantitative breakdown of catches in the fishery?</p> <p>Are there any ecosystem descriptions or catch composition time series available that may provide some empirical evidence of relative status of any such species?</p> <p>Are there management measures in place for any stocks shown to be depleted?</p>
D2.2 There is no substantial evidence that the fishery has a significant negative impact on the species.	<p>Some quantitative information that enables the assessment of the impact of the fishery on the species should be available. Management measures, ecosystem descriptions etc.</p> <p>Significant negative effect means that the fishery is highly likely to hinder the recovery of the species.</p>
D4 REFERENCES	<ul style="list-style-type: none"> • FishBase.org • Management measures • Time series of catch and effort • Ecosystem descriptions • Life history characteristics providing indications of species productivity, vulnerability and susceptibility to capture. • Observer reports

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454 **12. ECOSYSTEM IMPACTS**

455 The three sections in the Ecosystem Impacts module (E1, E2 and E3) relate to the impacts the
 456 fishery under assessment may have in other areas (on Endangered, Threatened or Protected (ETT)
 457 species, on the habitat and on the wider ecosystem). The assessor shall assess each sub-clause,
 458 determining if the clause is met or not met. If the majority of sub-clauses are met, the assessor
 459 shall award the main clause is then given a Pass rating, if the majority of sub-classes are not met,
 460 the assessor shall award a Fail rating. Evidence must be provided to justify the determinations.
 461 References shall be included in the reporting template.

462

463 **E1 Impacts on ETP Species - Minimum Requirements**
 464 **Guidance to support E1 assessment**

465 Assessors should provide evidence of the existence of a formal or informal ETP management
 466 strategy, with a focus on describing any measures which are in place to reduce the impacts of the
 467 fishery on one or more ETP species. Such measures could include:

- 468 • Gear restrictions / regulations;
- 469 • Spatial or seasonal restrictions;
- 470 • Fisher training;
- 471 • Voluntary or mandatory codes of conduct;
- 472 • Evidence that restrictions on the total level of fishery removals take into account the needs
 473 of ETP predator species.

474 Fisheries which have no specific measures in place may bypass this requirement (i.e. should be
 475 awarded a Pass against this clause) if there is substantial scientific evidence that no such measures
 476 are required.

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Clause / Sub-clause	Guidance
E1.1 Information on interactions between the fishery and ETP species is collected	
E1.1.1: ETP species which may be directly affected by the fishery have been identified.	<p>Assessors should provide evidence that fishery managers are aware of the ETP species which are present in the area(s) where the fishery is carried out. This may be explicit (e.g. a scientific study and/or report) or implicit (e.g. legislation or regulations to protect ETP species).</p> <p>Assessors should refer to national and international legislation, and the IUCN Red List, to determine to what extent all potential ETP species have been considered.</p> <p>Potential groups of ETP species include:</p> <ul style="list-style-type: none"> • Finfish, including sharks and rays • Marine mammals • Turtles

	<ul style="list-style-type: none"> • Sea birds • Invertebrates
<p>E1.1.2: Interactions between the fishery and ETP species are recorded and reported to management organisations.</p>	<p>Assessors should determine whether and how interactions with ETP species are recorded and reported. Assessors should consider how likely the methods recorded are to provide an accurate indication of the rates of interaction. Factors which could affect this include:</p> <ul style="list-style-type: none"> • The proportion of fishing trips on which an observer is present; • Whether or not reporting interactions is a legal requirement; • Whether fishery-dependent or -independent studies are carried out to determine the extent of ETP interactions; • The extent to which the fleet utilises video surveillance. <p>As a minimum, the management organisation must be made aware of every ETP mortality event.</p>
<p>E1.1.3: Collection and analysis of ETP information is adequate to provide a reliable indication of the impact the fishery has on ETP species.</p>	<p>Assessors should consider whether the information collected on ETP species is sufficient to provide fishery managers with an informed and reliable view of the impacts of the fishery on ETP species. This may include information collected independently of the fishery, e.g. by studies to determine the size and vulnerability of the ETP population, or survival rates of a species after capture.</p> <p>This clause should primarily be assessed by considering whether the conclusions reached in E1.1.2 – whether the fishery has a significant negative impact on ETP species – and in E1.1.3 – whether there is a strategy in place to manage impacts on ETP species – are founded on a solid evidentiary basis. The fishery should not be awarded a Pass against this clause if there is a significant degree of uncertainty surrounding either, and there are reasonable measures which managers could take to reduce that uncertainty but have not.</p>
<p>E1.2 The fishery has no significant negative impact on ETP species.</p>	
<p>E1.2.1: The information collected in relation to E1.1.3 indicates that the fishery does not have a significant negative impact on ETP species.</p>	<p>Assessors should review the conclusions reached by the management process – i.e. by managers and/or scientific organisations associated with fishery managers; however, assessors should also consider any fishery-independent information available.</p> <p>The assessor is not expected to conduct their own analysis of the likely impacts of the fishery on ETP species, and should instead review conclusions reached by experts; however, in most cases it is unlikely that the assessor will find a clear yes/no answer to the question. In these instances the assessor should consider the following:</p> <ul style="list-style-type: none"> • Does the activity of the fishery cause a large number of mortalities of the ETP species, relative to the population size of that species?

	<ul style="list-style-type: none"> • Does the activity of the fishery cause a large number of mortalities relative to the total fishery-related mortality of the ETP species? • Have any reliable sources expressed concerns about the level of ETP mortality in this specific fishery? <p>Do the biological characteristics of the ETP species make it particularly vulnerable to the specific type of fishing activity being carried out; e.g. does the gear used mean post-release mortality is likely to be high, or that unrecorded mortalities are likely? Does the fishery mainly interact with juveniles or adults? Etc.</p>
<p>E1.3 There is an ETP management strategy in place for the fishery.</p>	
<p>E1.3.1: There are measures applied to the fishery which are designed to manage the impacts of the fishery on ETP species.</p>	<p>Assessors should provide evidence of the existence of a formal or informal ETP management strategy, with a focus on describing any measures which are in place to reduce the impacts of the fishery on one or more ETP species. Such measures could include:</p> <ul style="list-style-type: none"> • Gear restrictions / regulations; • Spatial or seasonal restrictions; • Fisher training; • Voluntary or mandatory codes of conduct; • Evidence that restrictions on the total level of fishery removals take into account the needs of ETP predator species. <p>Fisheries which have no specific measures in place may bypass this requirement (i.e. this clause should be considered met) if there is substantial scientific evidence that no such measures are required.</p>
<p>E1.3.2: The measures are considered likely to achieve the objectives of regional, national and international legislation relating to ETP species.</p>	<p>The assessor should provide evidence of any actions or tools in place that explicitly or indirectly contribute to achieving the objectives of legislation relating to ETP species. Examples can include:</p> <ul style="list-style-type: none"> • Mitigation measures that minimise mortalities of a species with a specific gear type • Comparison with similar fisheries and species (e.g. similar gear, area of operation, interactions with same ETP species) • From trials or measures taken by the fishery itself.

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480 **E2 Impacts on Habitats - Minimum Requirements**
 481 **Guidance to support E2 assessment**

Clause / Sub-clause	Guidance
E2.1 Information on interactions between the fishery and marine habitats is collected.	
E2.1.1: Habitats which may be directly affected by the fishery have been identified, including any habitats which may be particularly vulnerable.	Assessors should provide evidence that fishery managers are aware of the habitats which are present in the area(s) where the fishery is carried out. This may be explicit (e.g. a scientific study and/or report, or habitat maps) or implicit (e.g. legislation or regulations to protect vulnerable habitats).
E2.1.2: Information on the scale, location and intensity of fishing activity relative to habitats is collected.	Assessors should determine whether information is available to indicate where the fishery takes place, such as through VMS monitoring. Assessors should consider how likely the methods recorded are to provide an accurate indication of the location and intensity of fishing activity and/or habitat interactions. Factors which could affect this include: <ul style="list-style-type: none"> • The proportion of vessels which use VMS, or implement another system to report their location during or after fishing activity. • The proportion of trips on which an observer is present. • Whether or not fishery-dependent or -independent studies have been conducted to determine the location and intensity of fishing activities and/or habitat interactions.
E2.1.3: Collection and analysis of habitat information is adequate to provide a reliable indication of the impact the fishery has on marine habitats.	Assessors should consider whether the information collected on the locations of habitats and fishing activity is sufficient to provide fishery managers with an informed and reliable view of the impacts of the fishery on those habitats. This may include information collected independently of the fishery. This clause should primarily be assessed by considering whether the conclusions reached in E2.2.2 – whether the fishery has a significant negative impact on habitats – and in E1.1.3 – whether there is a strategy in place to manage impacts on habitats – are founded on a solid evidentiary basis. The fishery should not be awarded a Pass against this clause if there is a significant degree of uncertainty surrounding either, and there are reasonable measures which managers could take to reduce that uncertainty but have not.
E2.2 The fishery has no significant impact on marine habitats.	
E2.2.1: The information collected in relation to F2.1.3 indicates that the fishery does not have a significant negative	Assessors should review the conclusions reached by the management process – i.e. by managers and/or scientific organisations associated with fishery managers; however, assessors should also consider any fishery-independent information available.

<p>impact on marine habitats</p>	<p>The assessor is not expected to conduct their own analysis of the likely impacts of the fishery on habitats, and should instead review conclusions reached by experts. The assessor should also consider the following:</p> <ul style="list-style-type: none"> • Is there evidence that the fishery damages vulnerable habitats? • How badly are the habitats likely to be damaged? How quickly will they recover? How frequently are they likely to be damaged? • Are there measures in place to prevent or mitigate this damage, such as gear restrictions or limitations to the areas in which fishing activity can occur? • Have any fishery stakeholders expressed concern about the damage the fishery is causing to vulnerable habitats? • Are there any habitats which might be damaged by the fishery which are particularly important, such as those important to ETP species?
<p>E2.3 There is a habitat management strategy in place for the fishery.</p>	
<p>E2.3.1: There are measures applied to the fishery which are designed to manage the impact of the fishery on marine habitats.</p>	<p>Assessors should provide evidence of the existence of a formal or informal habitats management strategy, with a focus on describing any measures which are in place to reduce the impacts of the fishery on habitats. Such measures could include:</p> <ul style="list-style-type: none"> • Gear restrictions / regulations; • Spatial or seasonal restrictions; • Fisher training; • Voluntary or mandatory codes of conduct; • VMS and/or observer coverage <p>Fisheries which have no specific measures in place may bypass this requirement (i.e. this clause should be considered met) if there is substantial scientific evidence that no such measures are required.</p>
<p>E2.3.2: The measures are considered likely to prevent the fishery from having a significant negative impact on marine habitats.</p>	<p>Assessors should primarily consider whether the measures described in F2.3.1 are appropriate and sufficient. This could involve a comparison of the measures with:</p> <ul style="list-style-type: none"> • The measures in place in other fisheries; • Any measures which have been recommended by scientific, industry or management organisations. <p>In the absence of any evidence that measures are inadequate (or in a fishery where such measures are not necessary), the assessor should consider this sub-clause Met.</p> <p>Assessors should note that determining whether the measures are <i>*actually*</i> effective is covered by clause E2.2.1.</p>

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484 **E3 Ecosystem Impacts - Minimum Requirements**
 485 **Guidance to support E3 assessment**

Clause / Sub-clause	Guidance
E3.1 Information on the potential impacts of the fishery on marine ecosystems is collected.	
E3.1.1: The main elements of the marine ecosystems in the area(s) where the fishery takes place have been identified.	<p>Assessors should provide evidence that fishery managers are aware of the main elements of the marine ecosystems which are present in the area(s) where the fishery is carried out. This may be explicit (e.g. information detailed in a scientific study and/or report) or implicit (e.g. legislation or regulations to protect key ecosystem components).</p> <p>As a minimum, there must be evidence of information describing the main species in the area(s) where the fishery takes place plus consideration of key abiotic factors such as water temperature.</p>
E3.1.2 The role of the species caught in the fishery within the marine ecosystem is understood, either through research on this specific fishery or inferred from other fisheries.	<p>Assessors should determine whether the roles of the target or main species caught in the fishery within marine ecosystems are understood. The level of understanding does not need to be detailed and does not need to be based on the fishery under assessment.</p> <p>In determining whether this clause is met, fishery assessors should consider every Type 1 species (i.e. any species subject to a Category A or Category B assessment). Assessors should also consider:</p> <ul style="list-style-type: none"> • Is the trophic level of each species understood? • Is it known whether each species is important as a food source, particularly for any ETP or otherwise vulnerable species? Is there information relating to the way environmental factors are likely to influence the population of each species?
E3.1.3: Collection and analysis of ecosystem information is adequate provide a reliable indication of the impact the fishery has on marine ecosystems.	<p>Assessors should consider whether the information collected on marine ecosystems is sufficient to provide fishery managers with an informed and reliable view of the impacts of the fishery on ecosystems. This may include information collected independently of the fishery, e.g. by studies to determine the impact of similar fisheries on ecosystem structure and function.</p> <p>This clause should primarily be assessed by considering whether the conclusions reached in E3.3.2 – whether the fishery has a significant negative impact on ecosystems – and in E3.3.3 – whether there is a strategy in place to manage impacts on ecosystems – are founded on a solid evidentiary basis. The fishery should not be awarded a Pass against this clause if there is a significant degree of uncertainty surrounding either, and there are reasonable measures which managers could take to reduce that uncertainty but have not.</p>

E3.2 There is no substantial evidence that the fishery has a significant negative impact on the marine ecosystem.	
E3.2.1: The information collected in relation to E3.1.3 indicates that the fishery does not have a significant negative impact on marine ecosystems	<p>Assessors should review the conclusions reached by the management process – i.e. by managers and/or scientific organisations associated with fishery managers; however, assessors should also consider any fishery-independent information available.</p> <p>The assessor is not expected to conduct their own analysis of the likely impacts of the fishery on ecosystems, and should instead review conclusions reached by experts. In the absence of any evidence that the fishery has had a significant negative impact on marine ecosystems, the assessor should award a Pass against this clause.</p>
E3.3 There is an ecosystems management strategy in place for the fishery.	
E3.3.1: There are measures applied to the fishery which are designed to manage the impacts of the fishery on marine ecosystems.	<p>Assessors should provide evidence of the existence of a formal or informal ecosystem, or similar, management strategy, with a focus on describing any measures which are in place to reduce the impacts of the fishery on one or more ETP species. Such measures could include:</p> <ul style="list-style-type: none"> • Evidence that restrictions on total catch are set with a consideration of the role of target species as prey; • Gear restrictions / regulations; • Spatial or seasonal restrictions. <p>Fisheries which have no specific measures in place may bypass this requirement (i.e. should be awarded a Pass against this clause) if there is substantial scientific evidence that no such measures to protect ecosystems are required.</p>
E3.3.2: The measures are considered likely to prevent the fishery from having a significant negative impact on marine ecosystems.	<p>Assessors should primarily consider whether the measures described in E3.3.1 are appropriate and sufficient to prevent the fishery from having significant negative impacts on the marine ecosystem. This could involve a comparison of the measures with:</p> <ul style="list-style-type: none"> • The measures in place in other fisheries; • Any measures which have been recommended by scientific, industry or management organisations. <p>In the absence of any evidence that measures are inadequate (or in a fishery where such measures are not necessary), the assessor should consider this sub-clause Met..</p> <p>Advisory: Assessors should note that determining whether the measures are actually effective is covered by clause E3.2.1.</p>