



Fisheries Standard Review

# Evidence Requirements Framework

Impact Assessment Report

April 2022

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The views and opinions expressed in this report do not necessarily reflect the official policy or position of the Marine Stewardship Council. This is a working paper, it represents work in progress and is part of ongoing policy development. The language used in draft scoring requirements is intended to be illustrative only and may undergo further refinement.

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# 1. Impact assessment report

## 1.1. Impact Assessment Framework

The aim of impact assessment is to provide clear information on the impacts of the options developed to sort out the policy issues identified in the project inception. It serves as a basis for comparing options against one another and against the business-as-usual scenario, and identify a preferred option if possible. It does not replace decision-making but is used as a tool to support the decision-making process and underpin evidenced based decision-making; increasing transparency, making trade-offs visible and reducing bias.

Impact assessment should help to:

- Specify how proposed options will tackle the identified issues and meet objectives
- Identify direct and indirect impacts, and how they occur
- Assess impacts in both qualitative and quantitative terms.
- Help find perverse or unintended consequences before they occur.
- Where possible, make risks and uncertainties known.

This is achieved by following MSC's Impact Assessment Framework that outlines when and how to undertake Impact Assessment. This ensures an efficient, systematic and consistent approach to policy development to underpin a responsive, robust and credible program. In particular, the Impact Assessment Framework defines the different types of impact (see below) and a suite of methodologies best suited to assessing each type.

The impact types used in the Impact Assessment are defined as follows:

- **Effectiveness:** The extent to which the change is deemed likely to be successful in producing the desired results and resolving the issue(s) originally identified.
- **Acceptability:** The extent that the change is considered tolerable or allowable, such that the MSC program is perceived as credible and legitimate by stakeholders.
- **Feasibility:** The practicality of a proposed change and the extent to which a change is likely to be successfully implemented by fisheries within a given setting and time period.
- **Accessibility & Retention:** The extent to which the change affects the ability of fisheries (both currently certified and those potentially entering assessment in the future) to achieve and maintain certification (i.e. changes in scores, conditions and pass rates).
- **Simplification:** The extent to which the change simplifies and does not further complicate the Standard such that it can be easily and consistently understood and applied.
- **Auditability:** The extent to which the change can objectively be assessed by Conformity Assessment Bodies (CABs) and Accreditation Services International (ASI) to determine whether the specified requirements are fulfilled, and CABs can provide scores.

The Impact Assessment report presents the results of this process, whereby each of the options for proposed changes to the Fisheries Standard are tested to understand their potential effects across the six defined impact types.

## 1.2. Problem Statement

The Fisheries Standard requires that assessment teams determine the extent to which information is adequate to understand the true impacts of a fishery. This requires assessors to consider the type and quality of information available from the fishery's monitoring programme and to make a judgement on its adequacy in the context of the scoring issue.

Guidance to support assessors in this task is limited and fragmented throughout the Fisheries Standard. Where it does exist, it is lengthy but without providing clear direction to assessors. This lack of clear instruction has resulted in differences in assessors' judgement and the transparency of their scoring.

Inconsistency in the assessment of information creates inequality in the program, as fisheries may unintentionally be held to a higher or lower bar at the discretion of the assessors. This creates uncertainty in the quality and quantity of information that is needed in order to perform well in the MSC Program, and weakens the MSC's theory of change to improve fisheries information.

## 1.3. Objectives

This project is seeking to develop a methodology for the appraisal of information that will strengthen the Fisheries Standard's information requirements. The specific objectives are to:

- Ensure that fishery assessments are based upon a high standard of information.
- Ensure that the determination of information adequacy is consistent and transparent.

# 2. Evidence Requirements Framework

## 2.1. Overview

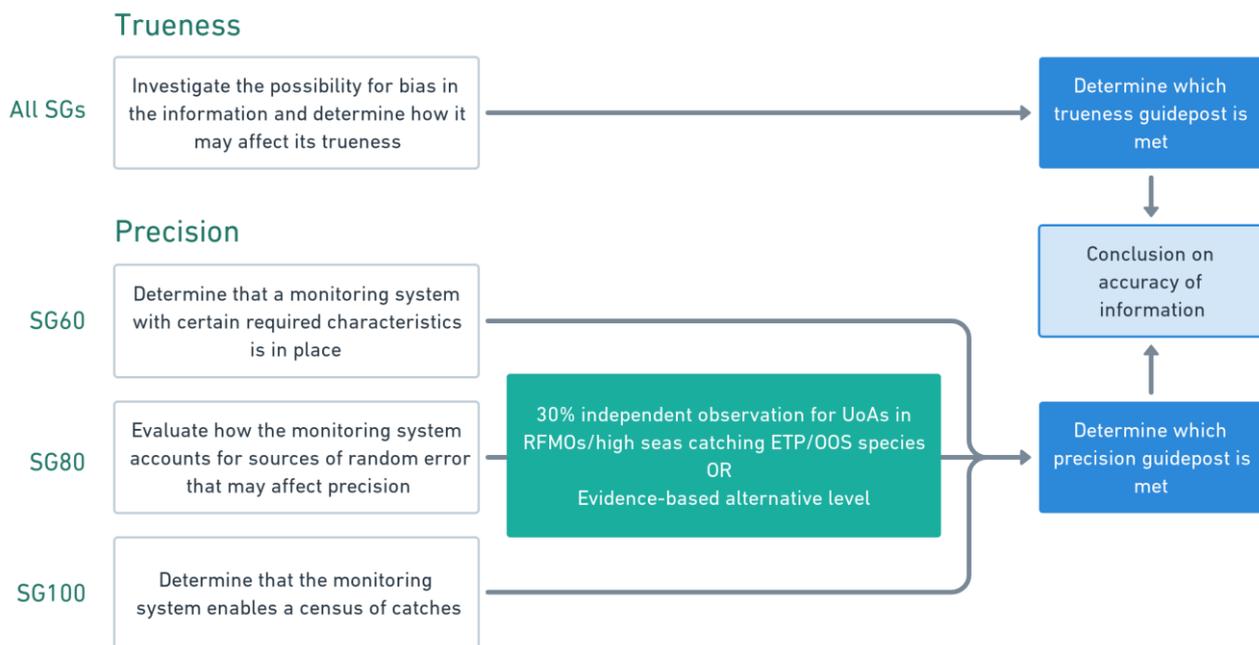
The MSC Fisheries Standard expects fisheries to be collecting and providing accurate information regarding their impact on the environment and compliance with management rules. To this end, the Evidence Requirements Framework (ERF) has been developed as a method to determine the accuracy of information used in the assessment of a fishery. It is used to score the adequacy of information needed to estimate fishery's impacts under Principle 2, its compliance with management regulations and its conformity with the shark finning requirements. It is situated in the MSC Toolbox Annex.

The ERF is focused on the design and characteristics of a fishery's monitoring systems and the way in which information is collected, reported, handled and provided to assessment teams. Using the ERF, teams must evaluate the extent to which information is true and the extent to which it is precise. The trueness of information relates to how well it reflects the reality of the situation, and is an important quality of all types of information. Precision relates to the variability of information, and is relevant when we consider the reliability of estimates of catch or bycatch.

The trueness and precision of information are influenced by a range of different factors. For example, the trueness of information is reduced if it is affected by bias, such as consistent underreporting of bycatch in logbooks. Precision is reduced where there is high variability in the data that is not properly accounted for, such as seasonal changes in how

a species is caught throughout the year. The ERF requires teams to consider how well a fishery’s monitoring system accounts for these different factors, from which a judgement can be made on the trueness and precision of the resulting information.

The ERF process is summarised in Figure 1 and described further below.



**Figure 1 Overview of the ERF process.** White boxes describe how the assessment team investigate the information to understand the factors that that affect its accuracy. The green box shows additional requirements on independent observation for fisheries operating in Regional Fisheries Management Organisation (RFMOs) on the high seas that catch Endangered, Threatened or Protected (ETP) or out-of-scope (OOS) species, and an exemption to this in certain circumstances. Blue boxes describe how the team determines a score based on the outcome of its investigations, where guideposts for trueness and precision respectively are defined at the SG60, 80 and 100 levels.

## 2.2. Design principles

The proposed ERF has two functional parts: an evaluation of trueness, which applies to all types of relevant information, and an evaluation of precision, which applies to catch estimates only. These functional parts are described below.

### 2.2.1. Evaluation of trueness

The evaluation of trueness requires assessors to consider the trueness of information that is relevant to understanding a fishery’s impact on P2 species or its compliance. This information is defined for each scoring issue. For example, relevant information to understand a fishery’s impact on in-scope species includes information on the fishery’s catch and effort, and on the status of the stock.

Assessment teams are prompted to ask a series of questions designed to identify the potential for bias to exist in the information. This is a process that considers the objectivity of information, its relevance to the fishery, its completeness in space and time and so on. Teams must look for the possibility of bias in the information, such as how information is collected, how it is reported or how it is interpreted.

This is a key stage for teams to investigate the objectivity of data collection methods, or the representativeness of a fishery’s sampling program, and consider whether it is adequate. The ERF sets out clear expectations regarding the adequacy of certain types of

data and monitoring methods to help assessors be rigorous and consistent in this task. Based on their investigation, teams must determine whether a series of 'trueness guideposts' are met with respect to the existence of bias and how it affects the trueness of information.

### 2.2.2. Evaluation of precision

For certain scoring issues that consider a fishery's impact in Principle 2, we are interested in the extent of interaction between a fishery and the species it is catching. Catch estimates are the primary way to quantify these interactions and as such we want to be assured of the precision of these estimates.

In a similar approach to trueness, teams are required to consider how the fishery's monitoring system accounts for the main types of variability that affect the precision of catch estimates. The more that variability is accounted for, the more confidence we can have regarding precision. Teams must consider the design of the catch monitoring system, including the type and level of monitoring in place, and determine whether a series of 'precision guideposts' are met. These guideposts set out clear expectations for what the monitoring system must be able to do, or have in place, to achieve the different scoring guideposts (SGs).

The ERF sets out clear requirements for what is needed to achieve these different thresholds in terms of how the monitoring system is designed, how the data are collected, and what level of monitoring is in place. This includes the need for fisheries to have independent observation, such as fishery observers or electronic monitoring.

When reaching an overall determination for the scoring issue, teams must combine the guidepost achieved for trueness and, if relevant, that achieved for precision to award a final score. This recognises that it may be possible to have precise but biased estimates of catch.

## 2.3. Other design considerations

The project has considered how evidence requirements should be set appropriately with respect to best practice and a fishery's risk of environmental impact. The headings below describe how the proposal has addressed these considerations.

### 2.3.1. Alignment with best practice

The ERF is focused on a fishery's monitoring system and how it works to improve the trueness and precision of information. In this way, the requirements reflect good practice with respect to statistical theory. The requirements direct teams to evaluate how systematic and random error are reduced to improve the trueness and precision of information, respectively. This is in line with best practice methodologies for appraising information quality as outlined in ISO 5725-1:1994<sup>1</sup>, including the terminology used. While this ISO standard relates to the accuracy of measurement methods and results, it provides a practical basis from which to adapt to fit the broader context of fisheries information.

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<sup>1</sup> Available online: <https://www.iso.org/obp/ui/#iso:std:iso:5725:-1:ed-1:v1:en>

The details of this approach were initially developed at a workshop held in May 2021<sup>2</sup>, where a range of participants with expertise in fishery monitoring and statistics provided insights into best practices with respect to investigating or assuring the accuracy of information. This resulted in the identification of best practice considerations for how bias and precision should be evaluated by teams. These considerations have since been further developed and refined into the current proposal, which includes best practice procedures for how information must be appraised by assessment teams, and guideposts that describe how a fishery's monitoring system must perform in order to achieve the different scoring levels.

It is important to note that there is no clear global best practice for the design of monitoring systems per se. There are important and necessary differences in how any given fishery is monitored, depending on its operational characteristics or management objectives. As such, the ERF is not based on an approach that requires certain monitoring designs, techniques or technologies. Nevertheless, by adopting monitoring approaches that are in line with industry best practices, a fishery would be expected to be in a strong position to meet the evidence requirements.

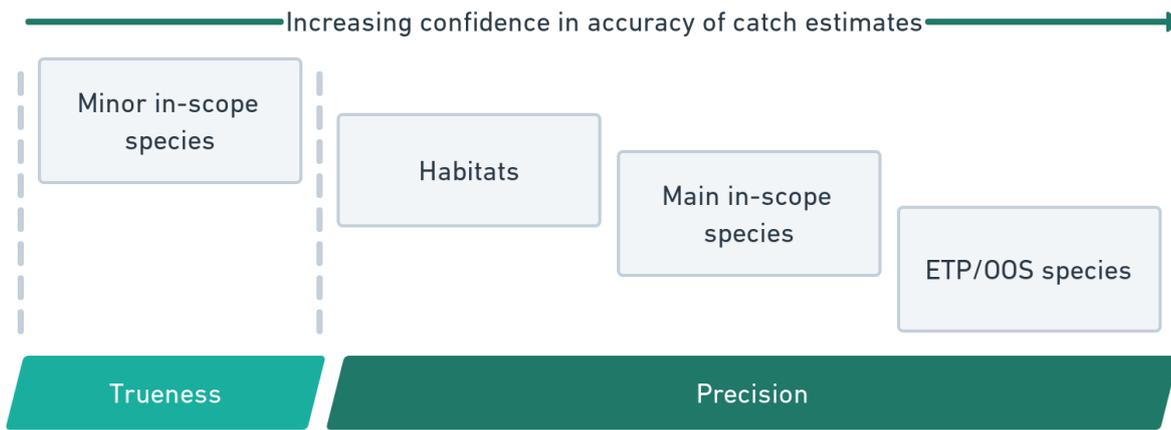
### 2.3.2. Incorporating a risk-based approach

The ERF is cognisant of risk, in the sense that fisheries that have a higher risk of causing negative impact are expected to more clearly demonstrate the accuracy of information. A risk-based approach is inherent in the application of different parts of ERF to different scoring components, as illustrated in Figure 2. For example, for habitat, main in-scope and ETP/OOS scoring elements, catch estimates must be evaluated in terms of both precision and trueness, whereas for minor in-scope species catch estimates need only be considered in terms of their trueness.

Note that the risk-based approach is much more clearly articulated at this stage of the project development than it was in previous versions of the proposal.

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<sup>2</sup> Report available online : [https://www.msc.org/docs/default-source/default-document-library/stakeholders/consultations/survey/consultation-surveys-2021/consultation-summary-reports-2021/msc-fisheries-standard-review---evidence-requirements-consultation-summary-report---may-2021.pdf?sfvrsn=30b59be9\\_5](https://www.msc.org/docs/default-source/default-document-library/stakeholders/consultations/survey/consultation-surveys-2021/consultation-summary-reports-2021/msc-fisheries-standard-review---evidence-requirements-consultation-summary-report---may-2021.pdf?sfvrsn=30b59be9_5)



**Figure 2 Application of the trueness and precision evaluation requirements of the ERF to different scoring components. The scale moving from left to right illustrates that greater confidence is required regarding the accuracy of catch estimates.**

As a part of the risk-based approach, a higher level of confidence is required for fisheries operating in Regional Fisheries Management Organisation (RFMOs) on the high seas that catch Endangered, Threatened or Protected (ETP) or out-of-scope (OOS) species. This is applied in the precision requirements at the SG80 level, where applicable fisheries must have 30% coverage of independent observation that is representative of their operations, in addition to needing to reduce random error in a range of other ways.

Species in this group are likely to have low rates of interaction that would be expected to drive high levels of variability in catches. As such, catch monitoring systems would typically struggle to achieve adequate levels of precision without high catch sampling rates. By introducing a threshold on independent observation in this way, the ERF requires a further level of assurance on the accuracy of catch estimates for these species. This reflects the idea that higher-risk fisheries are subject to a higher burden of evidence.

This requirement is nuanced by allowing for the recognition of an alternative level of monitoring, if this is based on credible evidence and has been adopted by the management agency. This is important to ensure that the evidence requirements placed on a fishery are appropriate with respect to its likely impacts.

Separately, but in a similar vein, the ERF is receptive to monitoring programmes that have been designed following a risk-based approach. For example, where a monitoring programme allocates monitoring effort according to an assessment of risk, such as focusing independent observation into certain areas where interactions with a ETP/OOS species are most likely to occur. It is anticipated this will encourage the adoption of industry good practice with respect to design of monitoring systems, and may allow a cost-effective pathway for fisheries to achieve the evidence requirements.

## 2.4. Evolution of the ERF proposal

The ERF has undergone continuous development since it was conceived in April 2020. The design has evolved in response to feedback from public consultation, input from MSC's governance bodies, expert workshops, consultancy and internal development. Table 1 provides a summary of its development journey.

**Table 1 Development stages of the ERF since early 2020.**

Date / stage	Description of the proposal
May 2020 Early concept	A high level design concept for an ERF was developed. This was presented to the STAC Principle 3 Working Group and at three <a href="#">public consultation workshops</a> . Feedback was gathered on the general concept and on stakeholders' expectations regarding information adequacy.
September 2020 Concept development	A number of alternative designs and configurations were presented as options, focusing on the sequence of the process and prescriptiveness of the requirements. A single configuration was selected that allowed for the most efficient process.
January 2021 Initial draft proposal	<p>A draft proposal was developed from the preferred concept. This was accompanied by a worked example using the primary species scoring issue. In this proposal, the scoring outcome was primarily driven by the amount of information available. The framework initially used thresholds based on the amount and type of information available to determine the maximum theoretical score that could be achieved for the SI. These thresholds were set at a different level depending on the UoA's risk of causing negative impact on the stock status, whereby more information would be needed for UoAs considered to have a high risk of negative impact. The quality of the information was then evaluated to finalise the score, which could be awarded at or below the theoretical maximum.</p> <p>The framework underwent substantial development during this time, responding iteratively to feedback from the Stakeholder Advisory Council (STAC) Principle 3 Working Group.</p> <p>See 'version A' in <a href="#">this earlier impact assessment</a> for details of this proposal and its likely impacts.</p>
March 2021 Revised draft proposal	<p>A revised draft proposal was developed based on internal development and feedback received from STAC.</p> <p>In this proposal, the amount of information available was not used to set a maximum score. Instead, assessors need to consider both the quality and quantity of available information more equally when determining a score. The consideration of UoA risk was retained. The proposal introduced the option of describing precision thresholds based on statistical properties of the observed variable (i.e. coefficient of variation), rather than specifying the number of observations required. The overall process was also simplified.</p> <p>This proposal was supported by STAC, TAB and the Board to continue to pilot testing, subject to an expert workshop to refine the assessment criteria and thresholds.</p> <p>See 'version B' in <a href="#">this earlier impact assessment</a> for details of this proposal and its likely impacts.</p>
July 2021 Pilot testing round 1	<p>The proposal was drafted into formal requirements for pilot testing. The overall design was not changed from the proposal agreed in March 2021, although the finer details of the proposal were developed. This included criteria for the assessment of risk, criteria for evaluating trueness and statistical values for the precision thresholds. While the need for alternative methods to achieve the thresholds was recognised, these were not yet developed in this version of the proposal.</p> <p>Feedback from pilot testing shows that this version needed further development. The risk assessment was laborious and offered limited benefit, assessors found it difficult to apply the concept precision thresholds using</p>

Date / stage	Description of the proposal
	statistical terms, and the process was not sufficiently detailed scoring rationales.
September 2021 Pilot testing round 2	A refined version was developed based on feedback from pilot testing and the STAC Principle 3 Working Group. The risk assessment step was removed to improve efficiency of the process, and alternative approaches for determining precision were included. Numerous edits and corrections were made to address issue of poor clarity and auditability, and more developed guidance was included.  Feedback from pilot testing and auditability review mainly identified issues that needed further instruction or clarification. There were also continuing challenges in using coefficient of variation to demonstrate precision thresholds.
October 2021 Final draft proposal	The use of coefficient of variation in precision thresholds was changed from earlier proposals. Thresholds were instead focussed on coverage of independent observation, or equivalent data sources, as a proxy for precision. This change was made to promote implementation and accessibility of the assessment of precision. Additional edits were made to address the issues of auditability and instruction.
Feb-Apr 2022 Further development	The version of the proposal that went to public consultation included some sections in square brackets that denoted where further development was needed. The BoT asked the MSC Executive to further develop these areas simultaneously to the public consultation.  Further details of the work undertaken to during this period is described in the heading below.

#### 2.4.1. Further development during February-April 2022

In January 2022 the Board of Trustees requested that the Technical Advisory Board (TAB) form a working group to support the MSC Executive in further developing the ERF's precision thresholds and integrating a risk-based approach. This work was limited to the parts of the proposal that had been indicated with square brackets in the public consultation documents.

To instruct this work, the Board set out the following terms of reference:

1. *The Board agreed that the Technical Advisory Board (TAB) Fisheries Sub-Group, with Stakeholder Advisory Council (STAC) observers, be convened to consider aspects of the Evidence Requirements project, specifically:*
  - a. *to re-evaluate the precision thresholds to ensure these were set appropriately*
  - b. *to consider assessment of risk before triggering precision thresholds.*
2. *The Board requested that the Executive draw up extended Terms of Reference for the TAB Fisheries Sub-Group for the aforementioned piece of work and circulate these to the TAB Chair and then the Board Chair for approval.*

In line with these terms of reference, during February-May 2022 there was further development, testing and targeted consultation on the draft ERF proposal. A workplan was designed that involved several development cycles, each involving a round of technical proposals, testing and consultation. Each successive development cycle built on the progress made in the previous one. This process allowed for intensive technical development, with frequent and repeated involvement of the TAB Fisheries Sub-Group, STAC members, fisheries outreach colleagues and assessors.

The work completed through the workplan process, along with the integration of feedback received from the public consultation, resulted in a revised proposal for the precision requirements. This is described in the previous sections of this report. Key revisions were:

- Revision of precision requirements to focus the assessment teams' evaluation on how the characteristics of the monitoring system work to improve the precision of catch estimates
- Introduction of more demanding requirements for independent observation, including a threshold of 30% coverage on certain fisheries that catch ETP/OOS species
- A requirement for a census of catches to meet the SG100 level
- Tightening up of the requirements, including additional guidance, to minimise risk of inconsistent application and loopholes

## 3. Summary of impacts

### 3.1. Impacts of the business-as-usual scenario

The business-as-usual scenario is problematic when a conformity assessment body's (CAB) determination of adequacy is inconsistent with the MSC's intent and stakeholders expectations for what is reasonable. While the status quo is simple in concept, the existing guidance is wordy and the fragmentation of instructions throughout the Standard is confusing and inefficient. The majority of stakeholders perceive this to be an issue and accept the need for improvement.

### 3.2. Impacts of the proposal

The ERF offers a substantial improvement in how information is scored as part of a fishery assessment. The framework methodology ensures a more comprehensive evaluation of information quality than is currently done. This will reduce uncertainty in an assessment, especially around a fishery's impacts, and increase confidence in its conclusions.

The use of the ERF by assessment teams in a standardised and structured way facilitates a consistent and transparent assessment of information. This will be important in ensuring a level playing field across assessments in terms of what information is required, how it is evaluated and what level of accuracy is expected at the different scoring guidepost levels.

There is broad support from all stakeholder groups for the general concept of strengthening evidence requirements. However, there is dissatisfaction from fishing industry stakeholders with the precision aspects of the proposal, primarily that requirements for independent observation are too onerous for many types of fishery. Conversely, there is concern from environmental NGO stakeholders that the ERF does not require sufficient levels of evidence, specifically independent observation, for "high risk" fisheries.

While the introduction of the ERF will add additional process to the assessment of information, this must be considered a necessary trade off to ensure a high and consistent standard of information. The design of the ERF itself allows for an efficient process.

The focus on information accuracy (rather than data type or quantity) will promote a high standard of information that is achievable in all fishery contexts and allows for innovation in fisheries monitoring. Precision thresholds that are based around practical characteristics of

fisheries monitoring, rather than statistical terms, aids understanding of the ERF by assessors, fishery partners and stakeholders.

Consultation with governance bodies and stakeholders throughout the development of the project has shown that the appraisal of information accuracy is a complicated and potentially divisive topic. Training and communication on the framework intent and methodology is therefore needed to ensure correct application by CABs and good understanding from fishery partners and stakeholders.

## 4. Impacts

### 4.1. Overview of impacts

The impact assessment presented in Table 2 below is based on feedback from two rounds of pilot testing, feedback from STAC and TAB, and expert judgement of the project and outreach leads, senior colleagues, feedback provided by outreach co-readers and responses to public consultations.

**Table 2 Impact assessment reporting table**

	Description	Business as usual	Evidence Requirements Framework
Effectiveness	Is the change effective at meeting the MSC's intent?	The status quo is not effective when a CAB's determination of adequacy is inconsistent with MSC's intent of the information adequacy SIs and stakeholders expectations for what is reasonable	The ERF will promote transparent and consistent scoring of information Requirements on the quality of information needed to become certified are more clearly articulated Focus on the monitoring system (rather than only prescribing the type or quantity of information required) will promote a high standard of information collection that is achievable in all fishery contexts Training and communication on the ERF's intent and methodology is needed to ensure correct application by CABs and good understanding from partners and stakeholders
	<i>The option seems effective at resolving the issue(s) consistently and reliably</i>	2 = Disagree	5 = Completely agree

	Description	Business as usual	Evidence Requirements Framework
Acceptability	Is the change acceptable to stakeholders?	Majority of stakeholders perceive this to be an issue and accept the need for improvement	<p>Broad support from all stakeholder groups for the general concept of strengthening evidence requirements</p> <p>Dissatisfaction from fishing industry stakeholders with the precision aspects of the proposal, primarily that requirements for independent observation are too onerous for many types of fishery</p> <p>Concern from environmental NGO stakeholders that the ERF does not require sufficient levels of evidence, specifically independent observation, for “high risk” fisheries</p> <p>Some concern from across different stakeholder groups that parts of the proposal may be open to misapplication and loopholes</p>
	<i>The option seems acceptable to stakeholders</i>	2 = Disagree	3 = Neither agree nor disagree
Feasibility	Is the change feasible to fishery partners?	The status quo is feasible	<p>Evidence requirements will raise the bar for some fisheries; necessary improvements may have associated costs but should be technically feasible for all fishery types in all regions</p> <p>Avoidance of requirements on specific monitoring approaches or technologies allows ERF to be feasible for all fishery contexts and allows for innovation in fisheries monitoring</p> <p>Fishery partners may need to rely to a greater extent on management and advisory bodies to provide certain evidence, particularly in relation to the precision requirements</p> <p>Training and communication on the framework intent and methodology needed to ensure correct application by CABs and good understanding from partners and stakeholders</p>
	<i>The option seems technically feasible for fishery partners</i>	5 = Completely agree	4 = Agree

	Description	Business as usual	Evidence Requirements Framework
	<i>The option seems affordable for fishery partners</i>	5 = Completely agree	3 = Neither agree nor disagree
	<i>The option seems possible given the management contexts of fishery partners</i>	4 = Agree	4 = Agree
	The option seems doable within 5 years for fishery partners	4 = Agree	4 = Agree
Accessibility and retention	Does the change affect the accessibility and retention of fisheries in the MSC Program?	The status quo may arguably have a positive impact on accessibility and retention as CABs have a lot of latitude in how they can determine adequacy.	Requirement for a specified level of independent observation is aimed at those fisheries where it is feasible and appropriate to implement it, therefore reducing wider accessibility impacts Avoidance of requirements on specific monitoring approaches or technologies helps ERF to be accessible for all fishery types in all regions Training on application of framework in full range of fishery scenarios, including data poor and small-scale, needed to ensure correct application by CABs in these situations
	<i>The option seems accessible to fisheries seeking certification in the future</i>	5 = Completely agree	4 = Agree
	<i>The option seems accessible to currently certified fisheries</i>	5 = Completely agree	4 = Agree
Simplification	Does the change simplify the Standard?	The status quo is simple in concept, although existing guidance is wordy and the fragmentation of instructions throughout the Standard is confusing and inefficient.	Process for assessing information adequacy is more clearly structured and easier to navigate than the status quo The framework will add additional process steps to the assessment of information; this is a necessary trade off to ensure a high and consistent standard of information
	<i>The option seems to simplify the Standard</i>	2 = Disagree	4 = Agree

	Description	Business as usual	Evidence Requirements Framework
Auditability	Is the change auditable by CABs?	Requirements with respect to determining adequacy in P1 are generally clear Some requirements in P2 and P3 are clear, but most allow for broad interpretation of what CABs need to do or demonstrate	Framework will promote transparent and consistent scoring, and tighter definitions and guidance will improve auditability Training on the framework methodology needed to ensure correct application by CABs in all fishery situations
	<i>The option seems to be auditable by CABs</i>	2 = Disagree	5 = Completely agree

## 5. Pilot testing

The ERF went for initial pilot testing in July 2021. The main findings of the first round of testing were:

- The risk assessment process is laborious and repetitive, and the outcome has only limited contribution to the rest of the process or the level of evidence required. There are numerous practical challenges with auditability of the risk assessments.
- Some assessors found it difficult to apply the concept precision thresholds based on coefficient of variation. As such they have found it difficult to pilot test this part of the framework.
- Parts of the process were treated as a check-box exercise, with no context and explanation provided. For example, assessors would simply indicate the outcome of a decision rule (yes/no) rather than provide a rationale.

The ERF was further developed following the initial pilot testing and feedback from the STAC Principle 3 Working Group, and was pilot tested again in September 2021. It also went an auditability review simultaneously.

Feedback from the second round of pilot testing and the auditability review mainly identified issues that needed further instruction or clarification. There were also continuing challenges in using coefficient of variation to demonstrate precision thresholds, summarised as:

- Calculation of a CV must be done by management agencies or science providers, rather than by assessments team due to concern of potential conflict of interest. This is likely to increase the burden on management agencies as part of the assessment of a fishery.
- Alternatives approaches for assessing precision thresholds that are based around demonstrating equivalence with CV are not sufficiently developed. This risks inconsistent application and may impact accessibility for data deficient fisheries.
- A reasonable understanding of statistical terms and methodologies is necessary to understand the assessment of precision thresholds. This level of knowledge may not be widely present in assessment teams and stakeholders. This risks misapplication of the ERF by assessors, and low levels of acceptance of the process by fishery partners and stakeholders.

Further pilot testing was completed as part of the workplan to finalise development of the proposal during Feb-April 2022. This involved review and testing of a series of proposals for revised precision requirements by two experienced assessors. This testing was based around a comprehensive auditability review, with no specific case study fisheries selected.

## 6. Consultations

### 6.1. Consultations completed

During May-July 2020, a high level design concept for an ERF was presented to the STAC Principle 3 Working Group and at three public consultation workshops. Feedback was gathered on the general concept and on stakeholders' expectations regarding information adequacy. The WG showed support for strengthening the evidence requirements, and provided some feedback on how to communicate the projects aims and technical details more clearly.

In September 2020, the framework received internal review through the co-reading process. A number of alternative designs and configurations were presented as options, focusing on the sequence of the process and prescriptiveness of the requirements.

In January-February 2021, the framework methodology was presented to the STAC Principle 3 WG using a worked example based on the primary species scoring issue. The framework underwent substantial development during this time, responding iteratively to feedback from the WG. In September 2021, the WG also provided feedback on the revisions to the framework following the initial round of pilot testing.

A group of outreach colleagues provided coordinated feedback on the developing proposals at several stages in late 2020, 2021 and early 2022.

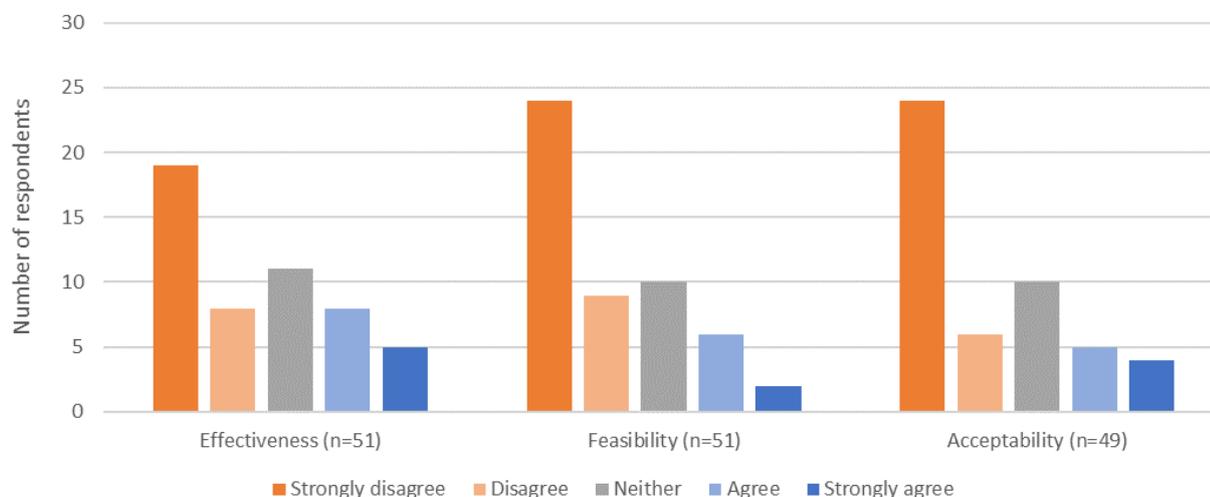
During February-April 2022, stakeholders were able to provide feedback on the proposed Standard and associated program documents through an online survey. The survey was open to all stakeholders for 60 days and sought feedback on the effectiveness of the proposal in addressing the issues outlined in the problem statement, whether the proposal would be feasible to apply and whether they found the proposed changes to the Standard to be acceptable. This public review was the most comprehensive opportunity to date for stakeholders to provide input into the development of the new Standard. All feedback was analysed and is summarised in the section below.

### 6.2. Analysis of public consultation (Feb-Apr 2022)

Stakeholders provided input to the public consultation in the form of a Likert response and written feedback. In general, stakeholders were unsupportive of the proposal, with many stakeholders noting strong opposition (Figure 2). However, a review of the written responses suggests that stakeholders' negative sentiment was almost exclusively in relation to the precision aspects of the proposal. Many stakeholders were more positive about the ERF approach overall, even where they indicated their disagreement with the requirements on precision (see Table 3). This would be consistent with the observation that stakeholders were more agreeable regarding the effectiveness of the proposal, compared to its feasibility or its acceptability.

A negative response was received from almost all commercial fishery and fishery management stakeholders, with one notable exception, with this group contributing around 25% of the responses. This appears to have been driven mostly by concerns on feasibility of precision requirements (see Table 3 for example responses). Some of the responses from other stakeholder groups were also strongly negative, although the feedback was

generally less polarised with some supportive statements. NGO stakeholders, who made up around 20% of respondents, were mainly supportive or neutral, although voiced some concern regarding the effective implementation of the requirements and the potential for loopholes.



**Figure 2 Proportion of responses to the public consultation on a five-point Likert scale. Respondents were asked whether they agreed with a statement regarding the acceptability, feasibility and the effectiveness of the proposed ERF. Note that a smaller number of respondents provided an answer to the question on acceptability.**

Most respondents provided a further written response to justify their response to the statements on the effectiveness and acceptability of the proposed revisions. These were grouped into five main categories, including comments with positive sentiment, presented in Table 3.

**Table 3 Themes of the consultation responses and action taken to address the feedback. The illustrative responses are direct quotes or partial quotes from the written text, some of which have been abbreviated for brevity.**

Response theme	Illustrative responses	Action taken
ERF does not require better evidence for fisheries with a high risk of causing negative impacts or having compliance issues, and vice versa	<p>“The proposed requirements may further diminish the credibility and legitimacy of the MSC Standard because they fail to establish unambiguous information requirements that address the reality that different Units of Assessment pose different levels of risk of ecosystem impacts, noncompliance, and under or misreporting....”</p> <p>“The [ERF] does not adequately determine the risks created by inadequate information.”</p> <p>“...it is surprising that MSC has decided not to follow a risk-based approach when it comes to data collection. There are clearly some fisheries that present greater risks to particular ETP species groups, habitats or overexploitation of target stocks because of the gear used, the spatial/temporal extent of the fishery etc....”</p>	Changes made. A risk-based approach has been elaborated in the revised proposal (see section 2.3.2).
ERF is not sufficiently	“The current Toolbox for ERF is overly complicated and includes so much flexibility in	Changes made. The revised proposal

Response theme	Illustrative responses	Action taken
prescriptive in its requirements and contains loopholes, particularly on the type/extent of monitoring needed for certain fisheries or at different scoring levels	<p>the related definitions and guidance that the intent is easily undermined....”</p> <p>“The Evidence Framework tool will add significant perverse incentives, work, and confusion for CABs and fisheries alike....”</p> <p>“What is equivalent to specified observer coverage may also be very subjective.”</p> <p>“Applying minimum thresholds for evaluation of trueness will help to improve the veracity of what is at present an almost entirely subjective assessment on the part of CABs.”</p>	includes clarifications and guidance to ensure its requirements are clear and there is no opportunity for unintended loopholes.
ERF requirements for independent observation exceed ‘reasonable practice’ and are too high for most small-scale fisheries due to practical and resource requirements	<p>“The proposed change from ‘Some quantitative information is adequate to assess...’ to specifying up to at least 30% and as high as 65% observer coverage (for some ETPOOS) is simply too significant to achieve, particularly for small vessels”</p> <p>“I also believe that for some artisanal fisheries, such as the [fishery name removed], the measures that are being assessed are excessive and that objective could be achieved with lower demands.”</p> <p>“In some coastal fisheries such as ours, a level of observers or independent information as high as the ones that are currently being proposed is not necessary to obtain relevant data.”</p>	Changes made. The proposal has been revised to reduce its accessibility impacts. Note that best practice is considered in terms of methodologies for appraising information quality (see section 2.2).
ERF is complex, cumbersome and takes substantial time to apply	“The instructions in the ERF are convoluted and the requirement to apply them at the scoring element level will add time and cost to all assessments....”	Changes made. The revised proposal includes editorial improvements and clarifications to improve efficiency and auditability.
Positive sentiment	<p>“The overall framework proposed is a vast improvement on the current situation and importantly infers the need for independently collected data....”</p> <p>“[The stakeholder] considers that the proposed Evidence Requirements Framework is a step in the right direction for ensuring that effective fisheries management systems are in place in MSC certified fisheries....”</p> <p>“Increased requirements around evidence requirements will ensure impacts on ETP and habitats can be assessed with greater confidence....”</p>	Comments noted.

## 7. Discussion and conclusion

There is broad support across stakeholder groups for the general concept of strengthening evidence requirements. The ERF has several major advantages over the business-as-usual approach and is therefore the preferred pathway forward.

The ERF ensures a more comprehensive evaluation of information quality than is currently done, and facilitates a consistent and transparent assessment of information. This will reduce uncertainty in an assessment, especially around a fishery's impacts, and increase confidence in its conclusions.

While its introduction it will add additional process steps to the assessment of information, this must be considered a necessary trade off to ensure a high and consistent standard of information.

The focus on information accuracy, rather than type or quantity, will promote a high standard of information that is achievable in all fishery contexts and allows for innovation in fisheries monitoring. Allowance for use of alternative ways to demonstrate that the required levels of information quality are achieved promotes accessibility and retention.

It will be important to provide comprehensive training to CABs and stakeholders on application of framework. This is needed to ensure correct application of the ERF across a full range of fishery scenarios.