Responsible Fisheries Management Certification Program

Guidance to Performance Evaluation for the Certification of Wild Capture and Enhanced Fisheries

Version 2.2

October 2024

Role of the Certified Seafood Collaborative

The Certified Seafood Collaborative (CSC), a 501(c)(3) non-profit foundation led by a diverse board of seafood and sustainability industry experts is the owner of the Responsible Fisheries Management (RFM) Certification Program. The CSC both owns and manages the RFM Program. The CSC Foundation Board is the approving body for all standards, strategy and policy related to the RFM Program. There are two advisory committees to the CSC Board of Directors, the Fishery Standard Committee and the Technical Committee.

Purpose of this Publication

This publication describes the guidance for assessment used in the evaluation of applicant fisheries to the Responsible Fisheries Management (RFM) Certification Program Fisheries Standard 2.2 (Fisheries Standard). Included are the specific performance levels for each clause and subclause given in the Fisheries Standard that must be met to demonstrate certification status. Successful applicants will be awarded the claim of a responsibly managed fishery for sustainable use.

In combination with the normative documents of the accredited certification program, this publication will provide (1) recommendations for assessors operating on behalf of qualified certification bodies regarding consistent application of performance evaluation of fisheries against the RFM Fisheries Standard, (2) understanding how levels of conformance for a given fishery are derived, (3) guidance to assessors for evaluating fishery applicants, and (4) guidance to fishery applicants regarding certification requirements.

Table of Contents

I. Guidance to Performance Evaluation

Fisheries Standard, Conformity Levels, and Performance Evaluation Outcomes

In the Responsible Fisheries Management (RFM) assessment process, clauses of the Responsible Fisheries Management Certification Program Fisheries Standard (Fisheries Standard) are scored according to conformance levels. A non-conformance (NC) is assigned when evidence or information acquired is insufficient to meet the intent of the clause (Table 1). Detailed explanations are provided below.

Full Conformance
Sufficient information/evidence is available to demonstrate full conformance to a clause. In these cases, a full conformance is assigned. Sufficient evidence is that which allows objective determination by the assessment team that a fishery fully complies with a given clause in the Fisheries Standard.

Minor Non-Conformance
Information/evidence is broadly available to demonstrate conformance to a clause although there are limited gaps in information that, if available, could clarify aspects of conformance and allow the assessment team to assign a higher conformance level. In these cases, a minor improvement is needed to achieve full conformance and a minor non-conformance is assigned. The assessment team will request further clarification of information from the applicant (and collaborating fisheries management organization) and this may result in the assignment of full conformance to a clause. If more than three minor non-conformances are found in any of the Key Components (A-D), assessment stops (applicant will not reach the next stage towards certification, the Peer Review stage) until evidence is made available to show a higher conformance level (Table 2).

Major Non-Conformance
Information/evidence is limited to demonstrate conformance to a clause. In these cases, a major improvement is needed to achieve full conformance and a major non-conformance is assigned. The assessment team will request further clarification of information with the applicant (and collaborating fisheries management organization) and where further substantive evidence is made available, assignment of either minor non-conformance or full conformance to a clause may occur. If more than one major non-conformances is found in any of the Key Components (A-D), assessment stops (applicant will not reach the next stage towards certification, the Peer Review stage) until evidence is made available to show a better conformity level (Table 2).

Critical Non-Conformance
Information/evidence is completely absent or contradictive to demonstrate conformance to a clause. In these cases, a critical non-conformance is assigned. A critical non-conformance will stop the assessment (applicant will not reach the next stage towards certification, the Peer Review stage), unless the applicant (and collaborating fisheries management organization) is able to provide information/evidence that demonstrates higher conformance of the fishery than that initially assessed (Table 2).

Table 1. *Definitions of performance evaluation outcomes.*

Evaluation Outcome	Definition
Full Conformance	When full conformance to the requirements of a clause is demonstrated.
Minor Non-Conformance	When a minor gap in information/evidence is identified from demonstrating full conformance.
Major Non-Conformance	When a major gap in information/evidence is identified from demonstrating full conformance.
Critical Non-Conformance	When a complete absence of information/evidence required that demonstrate full conformance to a clause is determined.

Table 2 presents the non-conformance limits before a fishery fails assessment (applicant will not reach thenext stage towards certification, the Peer Review stage). A critical non-conformance also results in the fishery failing theassessment.

Table 2. *Fishery fails thresholds per Key Component .*

Key Component	No. of clauses and subclauses	Maximum no. of non-conformances (NC) allowed per Key Component		
		Critical NC	**Major NC**	**Minor NC**
A. The Fishery Management System	30	No Critical NC is allowed within the overall assessment, or in any Category; 1 Critical NC = Fail.	1 Major NC allowed per Category (A-D), if no Minor NC assigned.	3 Minor NCs allowed per Category (A-D), if no Major NC assigned.
B. Science andStock Assessment Activities, and the Precautionary Approach	30			
C. Management Measures, Implementation, Monitoring and Control	30			
D. Serious Impacts of the Fishery on the Ecosystem	35			
Total number of supporting clause for Categories A-D	125	No Critical NC allowed; 1 Critical NC= Fail.	Up to 4 Major NCs (provided no more than 1 Major NC in any one category, and no Minor NCs are assigned).	Up to 12 Minor NCs (provided no Major NC in the same category and no more than 3 Minor NCs in any one category).

Performance Evaluation Parameters

In the assessment process, each supporting clause and subclause is associated with scoring guidance to ensure continuity and consistency across fisheries and assessment teams. Scoring is based on a systematic approach to the assessment of the fishery against each clause using a series of Evaluation Parameters (EPs): Process, Current Status/Appropriateness/Effectiveness, and Evidence Basis. These are considered of equal importance and are scored using the categories previously discussed (full conformance; minor or major non-conformance; critical non-conformance). These EPs evaluate a clause or subclause using the performance related parameters below.

Process
This EP requires that evidence is provided outlining the process or system used by a fishery management organization to implement or maintain key aspects of fishery management practices. Examples may include systems for data collection, laws and regulations, stock assessment, and enforcement. If evidence on the current process/system of a given process-based requirement is scarce or non-existent, then this EP is not satisfied resulting in non-conformance.

Current Status/Appropriateness/Effectiveness
This EP requires that the current status, appropriateness, or effectiveness of an element of fisheries management practices (depending on which one of these attributes is most relevant to a given clause) is demonstrated. Examples include data collected, results of stock assessment including stock status, and enforcement data. If evidence on the current status, appropriateness, or effectiveness of a given output- based requirement is scarce or non-existent, then this EP is not satisfied resulting in non-conformance.

Evidence Basis
This EP requires that the availability, quality, or adequacy of the evidence that is the base for scoring a given clause is assessed. If evidence availability (e.g., studies, reports, other data, and regulations) is scarce, low quality or non-existent, then this EP is not satisfied resulting in non-conformance.

The assessment team follows these guidelines (Figure 1) when scoring a clause:

- **If all EPs are satisfied, the clause is scored with a Full Conformance.**
- **If one EP (i.e., any) is not satisfied, the clause is scored with a Minor Non-Conformance.**
- **If two EPs (i.e., any) are not satisfied, the clause is scored with a Major Non-Conformance.**
- **If three or more EPs (i.e., any) are not satisfied, the clause is scored with a Critical Non-Conformance.**

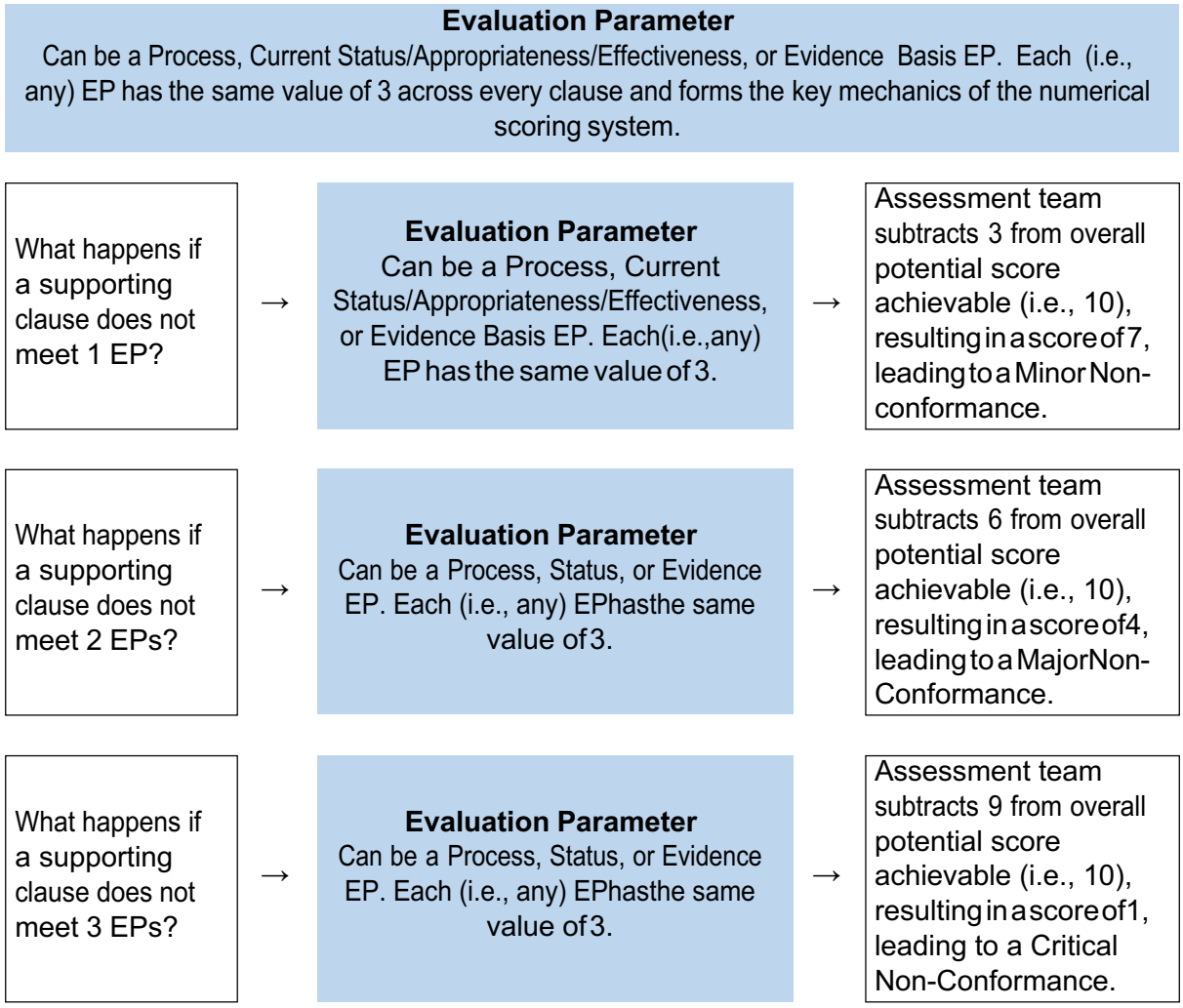


Figure 1. *Scoring mechanics in the Fisheries Standard Each of the EPs has the same value of 3. Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance), not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance) and not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance). This applies also to clauses that have 4 or more EPs as any 1, 2 or 3 EPs not met will result in the same NC level. Numerical scores apply only at the clause level and do not add up at the Key Component level.*

Note that for some clauses or subclauses, not all EPs are applicable. This is because not all clauses require the presence of a process (e.g., a formal procedure), and not all clauses require an evaluation of the current status, the appropriateness, and the effectiveness of the subject matter. The balance depends on the construction and type of supporting clause and its requirements. For instance, Current Status/Appropriateness/Effectiveness can be used in combination or individually, depending on the relevance to the clause. Finally, all clauses require the evaluation of the quality and adequacy of the Evidence Basis and this EP is consistent throughout all clauses. When one EP is not required, guidance is structured so that the balance of requirements of other EPs is always three or more. In this way, a balance of requirements for each clause is provided for the scoring process.

Please note that the EPs are the key mechanics to be used to determine a score..
The Fisheries Standard and related guidance is applicable to governance and management systems for small-scale and/or data limited fisheries, where appropriate, provided their performance can be objectively verified, with due consideration to the availability of data and the fact that management systems can differ substantially for different types and scales of fisheries.

The following codes represent the short form for the key FAO documents and specific articles, clauses, and criteria used to reference the Key Components and supporting clauses and subclauses of the Fisheries Standard.

Code	Reference
FAO CCRF (1995)	FAO. 1995. Code of Conduct for Responsible Fisheries Rome, FAO. ISBN 92-5-103834-1.
FAO Eco (2009)	FAO. 2005. Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries. Rome (and extensions 2009).
FAO Eco (2011)	FAO. 2011. Guidelines for the Ecolabelling of Fish and Fishery products from Inland Capture Fisheries. Rome.
FAO IGBD (2011)	FAO. 2011. International guidelines on bycatch management and reduction of discards. Rome.
FAO IUU (2001)	FAO. 2001. International Plan of Action to prevent, deter and eliminate illegal, unreported and unregulated fishing. Rome.
FAO FM/MPA (2011)	FAO. 2011. Fisheries management. 4. Marine protected areas and fisheries. FAO Technical Guidelines for Responsible Fisheries. No. 4, Suppl. 4. Rome.

Responsible Fisheries Management Fisheries Standard, Version 2.2 Scoring Guidance

A. The Fisheries Management System

1. There shall be a structured and legally mandated management system based upon and respecting international, State, and local fishery laws, for the responsible utilization of the *stock* under consideration and conservation of the marine environment.

FAO CCRF (1995) 7.1.3, 7.1.4, 7.1.9, 7.3.1, 7.3.2, 7.3.4, 7.6.8, 7.7.1, 10.3.1
FAO Eco (2009) 28
FAO Eco (2011) 35, 37.3

1.1 There shall be an effective legal and administrative framework established at international, State and local l levels appropriate for fishery resource conservation and management. The management system and the fishery operate in compliance with the requirements of international, State, and local laws and regulations, including the requirements of any regional and/or international fisheries management agreement.

FAO CCRF (1995) 7.7.1
FAO Eco (2009) 28
FAO Eco (2011) 35

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: Management agencies are physically and legally established at international, State and l levels.

Current status: The output of the management organization(s) is in line with fishery resource management needs. Examples may include rule making, scientific research, stock and ecosystem assessments, implementation of rules and regulations, and enforcement activities.

Appropriateness/Effectiveness: The management framework is appropriate for managing the resource. For example, the larger the exploitation, vulnerability, or risks of a fish stock, the more work and precision (assessment of the resource ensuring the risks related to overfishing and equivalent negative effects) shall be focused in managing the resource. This shall be done in compliance with legislative and regulatory requirements at the local, national, and international level, including the requirements of any regional fisheries management agreement. The management system shall not be subject to continual unresolved or repeated disputes or political instability.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that an effective legal and administrative framework established at the local and national level is appropriate for fishery resource conservation and management. In addition, the management system and the fishery operate in compliance with the requirements of local, national, and international laws and regulations, including the requirements of any regional fisheries management agreement. Examples may include fishery management plans or other relevant information.

1.2 Management measures shall consider (1) stock status (i.e., overfished, biomass) and genetic diversity (stock structure) over its entire area of distribution, and (2) other biological characteristics of the fish stock (stock) including age of maturity and reproductive potential.

FAO Eco (2009) 30.3
FAO Eco (2011) 37.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note on consideration of biological unity and other biological characteristics: Biological characteristics shall be interpreted as relating to the stability or resilience of the stock—i.e., its ability to recover from or resist a shock or disturbance, such as the impact of a fishery. The management system must consider the relative ability of the stock to recover from or resist potential adverse impacts. Characteristics considered shall include growth, fecundity, reproduction, lifespan, spawning cycle, population dynamics, impact of gear type, and essential habitat(s) needs and availability. Where life cycle and other biological characteristics are unknown, the management system shall ensure these uncertainties are factored into assessment and managing practices, as per the precautionary approach. Please note that for salmon fisheries, established goals take into account each stock over its entire area of distribution, because escapement is the *net result* of all factors, which have influenced each stock during its juvenile stages in freshwater, its oceanic migration, and the fisheries to which it is subjected.

Current Status/Appropriateness: If a stock is subject to two or more jurisdictions (nations, states, etc) (either by distribution or migration), the exploitation by all jurisdictions shall be considered when defining exploitation levels and determining stock status to avoid overfishing/depletion of the resource. The scoring of this parameter shall consider that significant migration may take a species outside the jurisdiction of the managing agency (e.g., for significant feeding or ontogenetic migration).

Effectiveness: Managers shall have an understanding of stock structure and composition as these relate to stock resilience over its entire distribution area. The underlying objective is to preserve genetic diversity between and within species, and avoid localized depletions (overall affecting the stock contributing to its resilience and stability). This assessment shall consider, when appropriate, demographic independence of populations or stocks (i.e., if a component stock of a species is demographically independent from another because it is genetically different, has significant difference in age structure, or if there is insignificant exchange among groups due to distance, environmental barriers, or other reasons).

Effectiveness: The stock may spend a portion of its life (migration for feeding, growth, or reproduction) in both fresh and saltwater, in international waters, or in another jurisdiction, and may suffer mortality or other pressures. These must be accounted for when assessing stock status.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that management measures consider (1) the stock status over its entire area of distribution, (2) the area through which the stock migrates during its life cycle, and (3) other biological characteristics of the stock. Examples may include the presence of genetic studies, age structure data, stock assessments or other relevant information.

1.2.1 Previously agreed management measures established and applied in the same region is regions shall be taken into account by management.

FAO CCRF (1995) 7.3.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: *Taken into account* means included and accounted in the basis of management decisions. *Previously agreed measures* include local or national laws or regulations, and also any management measures put into place by regional fisheries management organizations. Previous decisions can be reneged, altered, updated, or maintained intact, but must be included in the decision-making process. If previously agreed measures are reneged, altered, or updated, there shall be a scientific basis for the changes. *Not taken into account* may refer to management measures that are ignored, although they may still be legally binding in the fishery.

Process: There is a process or system that allows the continuity and updating of previously agreed and implemented management measures. Examples may include a specific review process or management plan where these measures can be clearly identified and continued implementation and updating can be carried out.

Current Status/Appropriateness/Effectiveness: Previously agreed management measures established and applied in the same region are included and part of current management decisions. Examples may include international or other agreements not honored by the management system or a management agency. The management system is effectively continuing implementation of agreed management measures.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that previously agreed management measures established and applied in the same region are taken into account by management.

1.3 Where transboundary, shared, straddling, highly migratory, or high seas stocks are exploited by two or more States (neighboring or not), the applicant and appropriate management organizations concerned shall cooperate and take part in the formal fishery commission or arrangements appointed to ensure effective conservation and management of the stock(s) in question and their environment.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

ScoreCalculationProcedure:*EachEvaluationParameterhasthesamenumericalvalueof3. Meetingallparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: This clause pertains only if the stock is transboundary, shared, straddling, highly migratory, or high seas. Otherwise, this clause is not applicable. This clause is justified by the evidence provided in clause 1.2. Where sub-stocks are referred to as part of an overallstock,thereshall besufficient information on biology,distribution, andlifecyclethat demonstratesthedegreeof association or disassociation, and the basis for the management approach taken, to prevent recruitment failure of the stock or other negative impacts that are likely to be irreversible or very slowly reversible.

Process: There is a mechanism in place by which the applicant organization(s) cooperates for the management of the transboundary, shared, straddling, highly migratory or high seas stock. This mechanism has the sustainable total exploitation of the stock as its main objective.

Current Status/Appropriateness/Effectiveness: There is evidence that the mechanism described in the process parameter is effective at ensuring the stock is sustainably exploited. This can take the form of evidence that the stock is not overfished or subject to overfishing across the entirety of the range of the stock.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that where transboundary, shared, straddling, highly migratory, or high seas fish stocks are exploited by two or more States, the applicant and appropriate management organizations concerned cooperate and take part in formal fishery discussions or arrangements that have been appointed to ensure effective conservation and management of the stock(s) and fisheries in question. Examples may include evidence of formal agreements, records of meetings, and decisions.

1.3.1 Conservation andmanagement measuresestablished forthe *stock underconsideration* withinthejurisdiction of the relevant States for transboundary, shared, straddling, highly migratory, or high seas stocks, shall be compatible in amanner consistent with therights, competence, and interests of the States concerned.

FAO CCRF (1995) 7.1.3, 7.1.4, 7.1.5, 7.3.2, 10.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

ScoreCalculationProcedure:*EachEvaluationParameterhasthesamenumericalvalueof3. Meetingallparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: This clause pertains only if stock is transboundary, shared,straddling, highlymigratory, or high seas. Otherwise, this clause is not applicable. This clause is justified by the evidence provided in clause 1.2. Compatibility of management measures does not mean identical management measures, but the approach shall be consistent with respect to the overall management and conservation goals of the stock.

Process: Identification of common objectives for maintenance of stock biomass.

Current Status/Appropriateness/Effectiveness: Implementation of measures to achieve the common objectives mentioned above (i.e., similar harvest rates based on stock status, common rebuilding objectives for depleted stocks).

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that conservation and management measures established for the *stock* within the jurisdiction of the relevant States for shared, straddling, high seas, or highly migratory stocks, are compatible in a manner consistent with the rights, competences, and interests of the States concerned. Examples may include evidence of formal agreements, records of meetings and decisions, stock assessment, and other reports.

1.4 A State's fishery management organization not member or participant of a sub-regional or regional fisheries management organization shall cooperate, in accordance with relevant international agreements and law, in the conservation and management of the relevant fisheries resources by giving effect to any relevant measures adopted by such organization or arrangement.

FAO CCRF (1995) 7.1.5

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking intwo parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

ScoreCalculationProcedure:*EachEvaluationParameterhasthesamenumericalvalueof3. Meetingallparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: This clause pertains only if stock is transboundary, shared,straddling, highlymigratory, or high seas. Otherwise, this clause is not applicable. This clause is justified by the evidence provided in clause 1.2.

Process: There is ongoing cooperation in stock assessment, data sharing, and other activities.

Current Status/Appropriateness/Effectiveness: Relevant measures are implemented by non-member States.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the State non-member or participant of a sub-regional or regional fisheries management organization cooperates, in accordance with relevant international agreements and law, in the conservation and management of the relevant fisheries resources by giving effect to any relevant measures adopted by such organization or arrangement. Examples may include reports detailing results of common surveys or acceptable harvest rates.

1.4.1 A fishery management organization seeking to take any action through a non-fishery organization which may affect the conservation and management measures taken by a competent sub-regional or regional fisheries management organization or arrangement shall consult with the latter, in advance to the extent practicable, and take its views into account.

FAO CCRF (1995) 7.3.5

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

ScoreCalculationProcedure:*EachEvaluationParameterhasthesamenumericalvalueof3. Meetingallparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: This clause pertains only if stock is transboundary, shared, straddling, highly migratory, or high seas. Otherwise, this clause is not applicable. This clause is justified by the evidence provided in clause 1.2.

Process: There is a history of prior consultation.

Current Status/Appropriateness/Effectiveness: The views of the managing fishery organization are taken into account.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that a fishery management organization seeking to take any action through a non-fishery organization which may affect the conservation and management measures taken by a competent sub-regional or regional fisheries management organization or arrangement consults with the latter, in advance to the extent practicable, and take its views into account. Examples may include reports detailing action taken by the State(s) in question.

1.5 The applicant's fishery management system, when appropriate for the *stock under consideration*, shall actively foster cooperation between States with regard to (1) information gathering and exchange, (2) fisheries research, (3) fisheries management, and (4) fisheries development.

FAO CCRF (1995) **7.3.4**

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: This clause pertains only if stock is transboundary, shared, straddling, highly migratory, or high seas. Otherwise, this clause is not applicable. This clause is justified by the evidence provided in clause 1.2.

Process: The extent to which a formal process or system is available.

Current Status/Appropriateness/Effectiveness: Level of activity, application, and level of engagement.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the applicant's fishery management system, when appropriate for the *stock under consideration*, fosters active international cooperation on fishery matters with regard to information gathering and exchange, fisheries research, fisheries management, and fisheries development. Example of evidence sources may include outputs from activity (e.g., reports, minutes, common or collective themes).

1.6 A fishery management organization and sub-regional or regional fisheries management organizations and arrangements, as appropriate, shall agree on the means by which the activities of such organizations and arrangements will be financed, bearing in mind, *inter alia*, the relative benefits derived from the fishery and the differing capacities of States to provide financial and other contributions. Where appropriate, and when possible, such organizations and arrangements shall aim to recover the costs of fisheries conservation, management, and research.

FAO CCRF (1995) 7.7.4

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is an agreed-upon system to finance the fishery management organizations and arrangements.

Current Status/Appropriateness/Effectiveness: The fishery management organizations and arrangements are currently financed using a cost recovery or other system.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there is agreement on the means by which the activities of such organizations and arrangements are financed. Where appropriate, and when possible, such organizations and arrangements aim to recover the costs of fisheries conservation, management, and research. Examples may include data showing the expenditure and cost recovery derived from fisheries management.

1.6.1 Without prejudice to relevant international agreements, States or fishery management organizations shall encourage banks and financial institutions not to require, as a condition of a loan or mortgage, fishing vessels or fishing support vessels to be flagged in a jurisdiction other thanthat of the State of beneficial ownership where such a requirement would have the effect of increasing the likelihood of non-compliance with international conservation and management measures.

FAO CCRF (1995) 7.8.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting all parameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: The fishery for the *stock under consideration* occurs outside the exclusive economic zone (EEZ), there is evidence of flags of convenience, and evidence of illegal, unreported, and unregulated (IUU) fishing. Not applicable otherwise.

Process: There is a system that encourages banks to require vessels to be flagged within the jurisdiction of interest.

Current Status/Appropriateness/Effectiveness: There is regulation that directs for vessels to be flagged outside the State's jurisdiction. The fishery for the *stock under consideration* occurs outside EEZ, and there are flags of convenience operations present, or evidence of IUU fishing.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the State or fishery management organizations encourages banks and financial institutions not to require, as a condition of a loan or mortgage, fishing vessels or fishing support vessels to be flagged in a jurisdiction other than that of the State of beneficial ownership where such arequirement wouldhavethe effect of increasingthelikelihood of non-compliancewith international conservation and management measures. Examples may include data showing fishery operation by vessels flying a flag different from that of the State where fishing geographically occurs.

1.7 Within the fishery management system, procedures shall be in place to keep the efficacy of current conservation and management measures and their possible interactions under continuous review, and to revise or abolish them in the light of new information.

FAO CCRF (1995) 7.6.8

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a procedure to review management measures. The procedure includes the use of outcome indicators against which the success of management measures in achieving specific management objectives is measured. The procedure covers all management measures, including those relating to the sustainable exploitation of the target stock; the mitigation of negative impacts on non-target species through bycatch, discarding, and indirect effects; and the protection of Endangered, Threatened, Protected (ETP) species and the physical environment. Please note that both the management processes of the North Pacific Fishery Management Council (NPFMC) for federal waters, and the Alaska Board of Fisheries (BOF) for state waters, allow for the continuous review of conservation and management measures. Such processes shall be clearly documented as relevant to key management measures for the fishery under assessment.

Current Status/Appropriateness/Effectiveness: If, as a result of the review process, it is determined that management measures are not achieving the specific management objectives they are designed to achieve, they are revised and updated as appropriate.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that within the fishery management system, procedures are in place to keep the efficacy of current conservation and management measures and their possible interactions under continuous review, and to revise or abolish them in the light of new information. Examples may include data showing recent regulation or management plan revisions.

1.8 The management arrangements and decision-making processes for the fishery shall be organized in a transparent manner.

FAO CCRF (1995) 7.1.9

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Current Status: There is transparency in management arrangements. Please note that both the management processes of the NPFMC for federal waters, and the BOF for state waters, shall be clearly documented to provide evidence for the transparency of these arrangements and decision-making processes.

Effectiveness: There is transparency in decision-making processes.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the management arrangements and decision-making processes for the fishery are organized in a transparent manner. Examples may include records of the management arrangements and decision-making processes.

1.9 Management organizations not party to the Agreement to Promote Compliance with International Conservation and Management Measures by Vessels Fishing in the High Seas shall be encouraged to accept the Agreement and to adopt laws and regulations consistent with the provisions of the Agreement.

FAO CCRF (1995) 8.2.6

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: Not applicable if the fishery does not occur in high seas.

Process: Regulation to implement the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas has been adopted. Assessors shall consult the following document http://www.fao.org/docrep/meeting/003/x3130m/X3130E00.htm for reference to the Agreement.

Current Status/Appropriateness/Effectiveness: There are laws regulating high seas fishing activity. Describe how they accomplish this.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization is party to the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, or has adopted laws and regulations consistent with the provisions of the Agreement. Examples may include reports on the management of high seas fishing activities.

2. Management organizations shall participate in coastal area management , decision-making processes and activities related to the fishery and its users, supporting sustainable and integrated resource use, and conflict avoidance.

FAO CCRF (1995) 10.1.1, 10.1.2, 10.1.4, 10.2.1, 10.2.2, 10.2.4

2.1 Within the fisheries management organization's jurisdiction, an appropriate policy, legal, and institutional framework shall be adopted in order to achieve sustainable and integrated use of living marine resources, (1) taking into account the fragility of coastal ecosystems and finite nature of their natural resources, (2) allowing for determination of the possible uses of coastal resources and governing access to them, and (3) recognizing the rights and needs of coastal communities and their customary practices to the extent compatible with sustainable development. In setting policies for the management of coastal areas, States shall take due account of the risks and uncertainties involved.

FAO CCRF (1995) 10.1.1, 10.1.3, 10.2.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lackingintwoparameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: A mechanism exists by which the integrated management of multiple coastal area uses is conducted, the possible uses of coastal resources are assessed, and access to them is governed. Accordingly, policies for the management of the coastal area are set. Assessment teams shall document how existing authorities and/or processes cooperate and interact together to manage coastal resources (living and non-living) in a transparent, organized, and sustainable way that minimizes environmental issues while taking into account the socio-economic aspects, needs, and interests of the various stakeholders of the coastal zone.

Current Status/Appropriateness/Effectiveness: The coastal management framework includes explicit consideration of the fragility of coastal ecosystems, the finite nature of coastal resources, and the needs of coastal communities, and accounts for the rights and customary practices of coastal communities. These policies take due account of risks and uncertainties.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that within the fisheries management organization's jurisdiction, an appropriate policy within the legal and institutional framework has been adopted in order to achieve sustainable and integrated use of living marine resources. Examples may include coastal management plans or other policy documents, and frameworks for resource/coastal management.

2.1.1 States shall establish mechanisms for cooperation and coordination in planning, development, conservation, and management of coastal areas.

FAO CCRF (1995) 10.4.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-*

conformance). Not meeting <u>any</u> 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting <u>any</u> 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).
Process: There is a mechanism to allow cooperation between neighboring States to improve coastal resource management.
Current Status/Appropriateness/Effectiveness: There are records of cooperation. Examples may include fishery, fishery enhancement, or other agreements or records from international forums.
Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the States establish mechanisms for cooperation and coordination in planning, development, conservation, and management of coastal areas. Examples may include reports or data on the international cooperation/information exchange in these events.

2.1.2 The fisheries management organization shall ensure that the authority or authorities representing the fisheries sector and fishing communities in the coastal management process have the appropriate technical capacities and financialresources.

FAO CCRF (1995) 10.4.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting all parameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There are appropriate technical capacities and financial resources.

Current Status/Appropriateness/Effectiveness: It can be determined with confidence that there are appropriate technical capacities and financial resources.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fisheries management organization ensures that the authority or authorities representing the fisheries sector and fishing communities in the coastal management process have the appropriate technical capacities and financial resources. Examples may include reports or data, overall operating staff, and financial resources/budgets available.

2.2 Representatives of the fisheries sector and fishing communities shall be consulted in the decision-making processes involving activities related to coastal area management planning and development. The public, as well as others affected, shall also be kept aware of the need for protection and management of coastal resources, and shall participate in the coastal management process.

FAO CCRF (1995) 10.1.2, 10.2.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: Describe how fishery-related information is disseminated and how a process is in place to consult with the fishery sector and fishing communities.

Current Status/Appropriateness/Effectiveness: There are records of consultations with the fisheries sector and fishing communities. Attempts have been made to create public awareness on the need for protection and management of coastal resources, and those affected by the management process have been made aware of its provision.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that representatives of the fisheries sector and fishing communities are consulted in the decision-making processes and involved in other activities related to coastal area management planning and development. The public, and others affected, are also kept aware of the need for the protection and management of coastal resources, and are participants in the management process. Examples may include public records of consultation activities and other available documentation published on the internet or distributed at public meetings.

2.3 Fisheries practices that avoid conflict among fishers and other users of the coastal area (e.g., fisheries enhancement facilities, tourism, energy) shall be adopted, and fishing shall be regulated in such a way as to avoid risk of conflict among fishers using different vessels, gear, and fishing methods. Procedures and mechanisms shall be established at theappropriateadministrativelevel to settleconflicts thatarisewithin the fisheries sector and between fisheries resource users and other coastal users.

FAO CCRF (1995) 7.6.5, 10.1.4, 10.15

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting <u>all</u>parameterswillresult in a score of 10 (i.e., full conformance). Not meeting <u>any</u> 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting <u>any</u> 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting <u>any</u> 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: These practices have been adopted, and there is aprocess to regulatefishing gear, methods, and vessels so as to avoid risk of conflict. If conflicts arise, there is a process in place to settle conflicts between fishery users and other users.

Current Status/Appropriateness/Effectiveness: Describe these practices and their effectiveness within the fishery sector, and between fishers and other coastal users.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that fisheries practices that avoid conflict amongfishers and other users of the coastal area (e.g., fisheries enhancement facilities, tourism, energy) are adopted and fishing is regulated in such a way as to avoid risk of conflict among fishers using different vessels, gear, and fishing methods. Procedures and mechanisms are established at the appropriate administrative level to settle conflicts that arise within the fisheries sector, and between fisheries resource users and other coastal users. Examples may include laws and regulations or other documents.

2.4 States' fisheries management organizations and sub-regional or regional fisheries management organizations and arrangements shall give due publicity to conservation and management measures and ensure that laws, regulations, and other legal rules governing their implementation are effectively disseminated. The bases and purposes of such measures shall be explained to users of the resource in order to facilitate their application and thus gain increased support in the implementation of such measures.

FAO CCRF (1995) 7.1.10

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process that allows for fishery-related information to be disseminated.

Current Status/Appropriateness/Effectiveness: There is a record of the disseminated information, and is it disseminated effectively, and the basis and purposes of such regulation explained to users.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that States' fisheries management organizations and sub-regional or regional fisheries management organizations and arrangements give due publicity to conservation and management measures and ensure that laws, regulations and other legal rules governing their implementation are effectively disseminated. The bases and purposes of such measures are explained to users of the resource in order to facilitate their application and thus gain increased support in the implementation of such measures. Examples may include records of such management measures published in the internet or distributed at public meetings.

2.5 The economic, social, and cultural value of coastal resources shall be assessed by the appropriatefisheries? management organization in order to assist decision making on their allocation and use.

FAO CCRF (1995) 10.2.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a system that allows for socio-economic value assessments and cultural value assessments to be carried out.

Current Status/Appropriateness/Effectiveness: There are socio-economic value assessments and cultural value assessments, both of which are effectively assisting decision making on resource allocation and use.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the economic, social, and cultural value of coastal resources is assessed in order to assist decision decision-making on their allocation and use. Examples may include reports on social, cultural, and economic value of the resource.

2.6 States shallcooperate to support and improve coastal area management, and in accordance withcapacities, measures shall be taken to establish or promote (1) systems for research and monitoring of the coastal environment, and (2) multidisciplinary research of the coastal area using physical, chemical, biological, economic, social, legal, and institutional capabilities.

FAO CCRF (1995) 10.2.4, 10.2.5, 10.3.3FAO CCRF (1995) 8.11.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting allparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a system that allows research and monitoring of the coastal environment, and multidisciplinary research in support of coastal area management is promoted.

Current Status/Appropriateness/Effectiveness: Systems of monitoring and research have taken into account physical, chemical, biological, economic, social, legal, and institutional capabilities to support coastal area management.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there is cooperation to support and improve coastal area management, and in accordance with capacities, measures are taken to establish or promote(1) systemsforresearch and monitoring of thecoastalenvironment, and (2) multidisciplinaryresearch of thecoastal area using physical, chemical, biological, economic, social, legal, and institutional capabilities. Examples may include reports on the status of the coastal area using the various aspects listed above.

2.7 In the case of a States' activities that may have an adverse environmental effect on coastal areas of other States, States shall provide timely information and if possible, prior notification to potentially affected States, and consult with those States as early as possible.

FAO CCRF (1995) 10.3.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a system to allow early information sharing (i.e., within appropriate timeframes to avoid negative consequences) between States in case of adverse environmental effects from one State

Current Status/Appropriateness/Effectiveness: There are current agreements for or past records of such occurrences. Examples may include oil spills, and aquaculture farm escapes among others.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the case of a States' activities that may have an adverse environmental effect on coastal areas of other States, the State provides timely information and if possible, prior notification to potentially affected States. Examples may include reports or data on the international cooperation in these events.

3. Management objectives shall be implemented through management rules and actions formulated in a plan or other framework.

FAO CCRF (1995) 7.3.3/7.2.2
FAOEco(2009)28.1,28.2
FAO Eco (2011) 35.1, 35.2

3.1 Long-term management objectives shall be translated into a plan or other management document (taking into account uncertainty and imprecision) and be subscribed to by all interested parties.

FAO CCRF (1995) 7.3.3
FAO Eco (2009) 28.1
FAO Eco (2011) 35.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: Management objectives based on the best scientific evidence available (which can include traditional/local knowledge, if verifiable) have been translated into a fishery management plan, are in regulation, or are in another document.

Current Status/Appropriateness/Effectiveness: The objectives described by the management plan are consistent with the sustainable use of the resource, and are subscribed to by all relevant fishery stakeholders.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that scientifically based long-term management objectives consistent with the sustainable use of the resource are translated into a plan or other management document which is subscribed to by all interested parties. Examples may include fishery management plan/framework or legal rules.

3.1.1 Thereshall bemanagementobjectivesseeking toensurethatETPspecies are protectedfrom adverseimpacts resulting from interactions with the unit of certification and anyfisheries enhancement activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible.

FAO Eco (2011) 41

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting <u>all</u>parameterswillresult in a score of 10 (i.e., full conformance). Not meeting <u>any</u> 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting <u>any</u> 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting <u>any</u> 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process that allows forsetting specificmanagement objectives in fishery managementplans or other relevant regulation (or other appropriate frameworks) for the protection of ETP species.

Current Status/Appropriateness/Effectiveness: There are clear objectives in management plans or other relevant regulations (or other appropriate frameworks) seeking to ensure that ETP species are protected from adverse impacts resulting from interactionswiththeunitofcertification andfisheryenhancement activity, including recruitment overfishing or other impacts that arelikely to beirreversible or very slowly reversible. Such objectivesmay be outlined in overarching fisheries legislation, regulations, or management plans.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are management objectives seeking to ensure that endangered species are protected from adverse impacts resulting from interactions with the unit of certification and any associated culture or enhancement activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible. Examples may include fishery management plans/framework or legal rules.

3.1.2 There shall be management objectives seeking to avoid, minimize, or mitigate impacts of the unit of certification on the *stock* under consideration's essential habitats, and on habitats that are highly vulnerable to damage by the unit of certification's fishing gear.

FAO Eco (2011) 41.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a mechanism in place by which the essential habitat of the *stock under consideration* and the potential impacts of the fishery (i.e., employing bottom contact gear) upon them are identified. This or a similar mechanism shall also be in place to identify habitats, which are highly vulnerable to fishery activities by the unit of certification. The information provided by these mechanisms shall be used to produce specific management objectives seeking to avoid significant negative impacts on habitats. When identifying highly vulnerable habitats, their value to ETP species shall be also considered, with habitats essential to ETP species being categorized accordingly.

Current Status/Appropriateness/Effectiveness: There is evidence that the objectives described above are in place, and that effective management measures relative to those have been implemented.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are management objectives seeking to avoid, minimize, or mitigate impacts of the unit of certification on the *stock under consideration*'s essential habitats and on habitats that are highly vulnerable to damage by the unit of certification's fishing gear. Examples may include various regulations, fishery management plans, data, and reports.

3.1.3 There shall be management objectives seeking to minimize adverse impacts of the unit of certification (including any fishery enhancement) on the structure, and function of theecosystems that are likely to be irreversible or very slowly reversible.

FAO Eco (2011) 36.9

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lackingin oneparameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting <u>all</u>parameterswillresult in a score of 10 (i.e., full conformance). Not meeting <u>any</u> 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting <u>any</u> 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting <u>any</u> 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: Thereis aprocess inplace by whichadverseimpacts ofthefishery(including anyfisheryenhancement) on thestructure, and function of aquatic ecosystemsthat arelikely to be irreversible or veryslowly reversibleareidentified. Reversibility refers tothe effects of a process or condition capable of being reversed so that the previous state is restored. This process results in setting relative management objectives. Management priority shall be focused primarily towards minimizing and avoiding identified impacts.

Current Status/Appropriateness/Effectiveness: There are management measures in place to achieve the objectives described in the process parameter. Such objectivesmay be outlines inoverarchingfisheries legislation, regulations, or managementplans.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are management objectivesseeking to minimize adverseimpacts of the fishery(including any enhancement activities) on the structure, processes, and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible. Examples may include fishery management plans, other regulatory documents, or laws.

3.2 Management measures shall provide, *inter alia,* that:

3.2.1 Excess fishing capacity shall be avoided and exploitation of the stocks shall remain economically viable.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There are management measures in place to limit and/or reduce the total fishing capacity of the unit of certification. These measures shall include specific fishing capacity objective(s), which themselves are based on the best scientific evidence available to understand the level of fishing pressure appropriate to ensure the long-term sustainability of the fishery. Please note that assessors should ensure that catches are within limits, and that data from enforcement show an adequate level of compliance with fisheries laws and regulation.

Current Status/Appropriateness/Effectiveness: The fishing capacity of the unit of certification is at or below the level of the specific fishing capacity objective(s).

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that excess fishing capacity is avoided and exploitation of the stocks remains economically viable. Examples may include fishery reports on harvest recommendation or fleet reports.

3.2.2 The economic conditions under which fishing industries operate shall promote responsible fisheries.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: Where best scientific evidence available determines that it is necessary, there are management measures in place to ensure the economic conditions under which the fishery operates promote responsible fisheries.

Current Status/Appropriateness/Effectiveness: There is evidence for the general economic value of the resource and its benefit to fishermen. There is enforcement data that supports the occurrence of responsible fishing practices.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the economic conditions under which fishing industries operate promote responsible fisheries. Examples may include economic reports or enforcement data.

3.2.3 The interests of fishers, including those engaged in subsistence, small-scale, and artisanal fisheries shall be taken into account.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
	Lacking in two parameters	**Lacking in one parameter**	**Fulfills all parameters**

Lacking in three or more parameters			

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a system or process in place that identifies the interests of small-scale fishers, either through stakeholder engagement or social research, in a way, which permits the utilization of the information during the management measure development process.

Current Status/Appropriateness/Effectiveness: There is evidence that the interests of small-scale fishers are effectively taken into account during the development of management measures, and there is no evidence that small-scale fisheries are adversely impacted by any management measures currently in place.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the interests of fishers, including those engaged in subsistence, small-scale, and artisanal fisheries are taken into account. Examples may include dedicated quotas, public meeting records, laws, and regulations.

3.2.4 Biodiversity of aquatic ecosystems shall be conserved and ETP species shall be protected. Where relevant, there shall be management objectives, and as necessary, management measures.

FAO CCRF (1995) 7.2.2

FAO Eco (2009) 28.2
FAO Eco (2011) 35.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There are management measures in place specifically designed to ensure that the biodiversity of aquatic ecosystems are conserved and ETP species are protected. This shall reflect the existence of specific management objectives and measures, which are based on the best scientific evidence available.

Current Status/Appropriateness/Effectiveness: The management measures currently in place have been successful in meeting the management objectives. Such objectives may be outlines in overarching fisheries legislation, regulations, or management plans. There is no evidence that the fishery is currently having a significant adverse impact on aquatic ecosystems, and it is not putting any ETP species at risk of extinction.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that biodiversity of aquatic ecosystems is conserved and ETP species are protected. Where relevant, there are management objectives, and as necessary, management measures. Examples may include laws and regulations, fisheries management plans, and species status reports.

B. Science and Stock AssessmentActivities, andthePrecautionary Approach

4. There shall be effective fishery data (dependent and independent) collection and analysis systems for stock management purposes.

FAO CCRF (1995) 7.1.9, 7.4.4, 7.4.5, 7.4.6, 8.4.3, 12.4
FAO Eco (2009) 29.1–29.3
FAO Eco (2011) 36.1, 36.3–36.5, 37.4

4.1 All significant fishery removals and mortality of the target species (shall be considered by management. Specifically, reliable and accurate data required for assessing the status of fishery(ies) and ecosystems—including data on retained catch, bycatch, discards, and waste—shall be collected. Data can include relevant traditional, fisher, or community knowledge, provided their validity can be objectively verified. Thesedata shall be collected, at an appropriate time and level of aggregation, by relevant management organizations connected with the fishery, and provided to relevant States regional, and international fisheries organizations.

FAO CCRF (1995) 7.3.1, 7.4.6, 7.4.7, 12.4
FAO Eco (2009) 29.1–29.3
FAO Eco (2011) 36.1, 36.3, 36.4

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting allparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: Provision of data to relevant States and, regional, and international fisheries organizations is dependent on the nature of the stock (i.e., transboundary, shared, straddling, highly migratory and high seas stock) and the type or arrangement in place for co-management (i.e., commission, arrangement, etc.). Thispart of the clause does not apply in cases where stocks occur entirely in one State's EEZ or jurisdiction, and co-management with another country is not required.

Process: There is a process or system that allows for effective data collection (including data on retained catch, bycatch, discards and waste) on the status of fisheries and ecosystems for management purposes. In the case of stocks fished by more than one State, this includes a system or agreement with other States to ensure mortality and removals data are available for the entirety of the biological stock. Some fisheries and/or fish stock are hard to monitor for various reasons, including remoteness of operation/distribution and complexity of fishing operations—posing particular challenges with the collection and maintenance of adequate, reliable, and current data and/or other information. Assessors shall acknowledge and explain these challenges, data collection, and maintenance to cover all stages of fishery development in accordance with applicable international standards and practices. Forsalmon, the assessorsshall describe andpresent the enumerationmethods (i.e., peak aerial survey, feet survey, weir count, tower, mark–recapture, sonar, etc.) utilized for all the major stocks managed by formal escapement goal in Alaska. Such summary data can be found in the annually released ADF&G document *Summary of Pacific salmon escapement goals in Alaska with a review of escapements from* [year] *to* [year]. The document generally reviews thelatest 9–10 years of salmon escapements, enumeration, goal development methods, and therelative escapement goal performance.

Current Status/Appropriateness/Effectiveness: There are appropriate and reliable data collection and estimation methods. Reliable and accurate data arecollected on retained catch, bycatch, discards, and waste(for targeted and non-targetedfisheries), and the direct and indirect impacts of the fishery on the ecosystem. Such information is disseminated to all relevant fishery management authorities. Overall, the data collection system is considered effective for the purposes of this clause if fishery scientists believe there is a high probability that the total estimated mortality is an accurate reflection of the actual total mortality across the entire biological stock. Fishery data are collected with a frequency and level of aggregation, which allows the effective and informed management of the stock,. The appropriate level of aggregation will often be the stock level, but

could alsoreflect specific habitats, geartypes, sub-populations, etc. The requirementsfordatacollection arefocused on the need to assess the effects of the unit of certification on non-target stocks. Non-target catches and discards refer to species/stocks that are taken by the unit of certification other than the stock for which certification is being sought. The adequacy of data relatesprimarily tothequantity and type of datacollected(including sampling coverage) and depends crucially onthenature of the systems being monitored and purposes to which the data are being put. Some analysis of the precision resulting from sampling coverage would normally be part of an assessment of adequacy and reliability. The currency of data is important, *inter alia*, because its capacity for supporting reliable assessment of current status and trends declines as it gets older.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that all significant fishery removals and mortality of the target species are considered by the fishery management organizations. Specifically, reliable and accurate data requiredfor assessing the status of fisheries and ecosystems—including data on retained catch, bycatch, discards, and waste—are collected. Data can include relevant traditional, fisher, or community knowledge, provided their validity canobjectively beverified(i.e., theknowledge has been collected and analyzedthough asystematic, objective, and well-designed process, and is not just hearsay). Examples may include stock assessment reports, catch data, and observer data.

4.1.1 Timely, complete, and reliable statistics shall be compiled on catch and fishing effort and maintained in accordance with applicable international standards and practices, and in sufficient detail to allow sound statistical analysis for stock assessment. Such data shall be updated regularly and verified through an appropriate system. The use of research results as a basis for setting management objectives, reference points, and performance criteria, as well as forensuring adequate linkage between applied research and fisheries management (e.g., adoption of scientific advice) shall be promoted. Results of analysis shall be distributed accordingly as a contribution tofisheries conservation, management, and development.

FAO CCRF (1995) 7.4.4, 12.3, 12.13
FAO Eco (2009) 29.1, 29.3
FAO Eco (2011) 36.3, 36.5

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting allparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process or system that allows for the production, maintenance, update, and verification of statistical data to international standards. Such standards include the FAO Coordinating Working Party on Fishery Statistics *Handbook of Fishery Statistical Standards*. Also, there is a process for the use and distribution of research results as a basis for setting management objectives, reference points, and performance criteria, as well as for ensuring adequate linkage between applied research and fisheries management (e.g., adoption of scientific advice). Please note that *stock assessment* for salmon is intended as the processes that leads to enumeration, escapement goal development, and fishery management activities to meet escapement goals.

Current Status/Appropriateness/Effectiveness: There is evidence for the production, maintenance, updating, and review of statistical data oncatch andfishing effortin thefisheryunderassessment. There is evidencethat thebest scientificevidence available is used to inform the fisheries management process. Where there is a legal requirement forthe advice of scientific authorities to be adopted, this shall be viewed as conformance with this evaluation parameter.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that timely, complete, and reliable statistics are compiled on catch and fishing effort and maintained in accordance with applicable international standards and practices, and in sufficient detail to allow sound statistical analysis for stock assessment. Such data are updated regularly and verified through an appropriate system. The use of research results as a basis for setting management objectives, reference points, and performance criteria, as well as for ensuring adequate linkage between applied research and fisheries management (e.g., adoption of scientific advice) is promoted. Analysis results are distributed accordingly as a contribution to fisheries conservation, management, and development. Examples may include stock assessment reports and other data.

4.1.2 In the absence of specific information on the *stock under consideration*, generic evidence based on similar stocks can be used. However, the greater the risk of overfishing, the more specific evidence is necessary to ascertain the sustainability of intensive fisheries.

FAO Eco (2009) 30.4
FAO Eco (2011) 37.4

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: If the fishery for the *stock under consideration* is managed fully using stock-specific information then this clause can be scored with full conformance.

Process: There is a process that allows for the use of generic evidence based on similar stocks for fisheries with low risk. The greater the risk, the more specific evidence is necessary to assess sustainability. In principle, "generic evidence based on similar stocks" should not suffice, but it may be adequate where there is low risk to the *stock under consideration*. In general, "low risk to that *stock under consideration*" would suggest that there is very little chance of the stock becoming overfished (e.g., where the exploitation rate is very low and the resilience of the stock is high). However, the evidence for low risk and the justification for using surrogate data shall come from the stock assessment itself.

Current Status/Appropriateness/Effectiveness: Information has been utilized from generic evidence based on similar fishery situations. Based on the risk of overfishing, the information utilized is of higher precision to account for higher risks (i.e., intensive fisheries).

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the absence of specific information on the *stock under consideration*, generic evidence based on similar stocks can be used for fisheries with low risk to that *stock under consideration*. However, the greater the risk of overfishing, the more specific evidence is necessary to ascertain the sustainability of intensive fisheries. Examples may include stock assessment reports and other data.

4.2 An observer scheme designed to collect accurate data for research and support compliance with applicable fishery management measures shall be established.

FAO CCRF (1995) **8.4.3**
FAO Eco (2009) 29.2bis

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: An observer program is present. There may be cases where collection of accurate data for research and support compliance could be established without the use of observers or a formal observer scheme (i.e., inspection scheme, enforcement, port sampling, at shore inspection, voluntary or compulsory logbooks, e-logbooks or other harvester collected data, electronic monitoring [video], or bycatch surveys). The reliability and accurateness of that system(s) would need to be verified accordingly. Note also that some fisheries observer programs are designed to collect biological data and others serve mainly as a compliance or enforcement tool. This shall be considered accordingly in the overall evaluation of this clause. Assessors shall question primarily whether the required data for fisheries management are collected or if there are important data gaps (e.g., because of the absence of an observer program).

Current Status/Appropriateness/Effectiveness: The data collected by the observer program is considered accurate and useful.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that an observer scheme designed to collect accurate data for research and support compliance with applicable fishery management measures is established. Examples may include stock assessment, survey, observer, or other reports.

4.2.1 Where necessary, fisheries management organizations and regional fisheries management organizations andother such arrangements should strive to achieve a level and scope of observer programs sufficient to provide quantitative estimates of total catch, discards, and incidental takes of living aquatic resources.

FAO IGBD (2011) 5.1.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a clear system that allows the observer program, or any other appropriate data gathering system as appropriate, to provide sufficient quantitative estimates of total catch, discards, and incidental takes of living aquatic resources.

Current Status/Appropriateness/Effectiveness: The data collected by the observer program is considered accurate and useful, especially for providing quantitative estimates of total catch, discards, and incidental takes of living aquatic resources.

Evidence Basis: The availability, quality, and/or adequacy of theevidence is sufficient to substantiate thatthe observer program is established and able to provide quantitative estimates of total catch, discards, and incidental takes of living aquatic resources. Examples may include stock assessment, observer, survey, or other reports.

4.3 A fisheries management organization, regional fisheries management organizations or arrangements shall compile data and make them available, in a manner consistent with any applicable confidentiality requirements, in a timely manner and in an agreed format to all members of these organizations and other interested parties in accordance with agreed procedures.

FAO CCRF (1995) 7.4.6, *7.4.7*

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: Not applicable if no regional or sub-regional body is involved in fishery management between one or more countries.

Process: There is a system within the regional body structure that allows for data distribution in line with confidentiality requirements.

Current Status/Appropriateness/Effectiveness: There is evidence proving that confidentiality requirements are satisfied when data is distributed to the various parties.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that a fisheries management organization, regional fisheries management organizations or arrangements compile data and make them available, in a manner consistent with any applicable confidentiality requirements, in a timely manner and in an agreed format to all members of these organizations and other interested parties in accordance with agreed procedures. Examples may include reports where confidentiality requirements have been effected.

4.4 States shall stimulate the research required to support policies related to fish as food.

FAO CCRF 12.7

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is research to support policies related to fish as food.

Current Status/Appropriateness/Effectiveness: There is evidence of this research.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the State stimulates the research required to support policies related to fish as food.

4.5 There shall be sufficient knowledge of the economic, social, marketing, and institutional aspects of fisheries collected through data gathering, analysis, and research, as well as comparable data generated for ongoing monitoring, analysis, and policy formulation.

FAO CCRF (1995) 7.4.5, 12.9

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a system in place for collecting economic, social, marketing, and institutional knowledge of the fisheries.

Current Status/Appropriateness/Effectiveness: These data are used for ongoing monitoring, analysis, and policy formulation.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there is sufficient knowledge of the economic, social, marketing, and institutional aspects of fisheries, that they are adequately researched, and that comparable data are generated for ongoing monitoring, analysis, and policy formulation. Examples may include reports on social/cultural/economic value of the resource.

4.6 The fisheries management organization shall investigate and document traditional fisheries knowledge and technologies—in particular those applied to small-scale fisheries—in order to assess their application to sustainable fisheries conservation, management, and development.

FAO CCRF (1995) 12.12

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10

Lacking in three or more parameters	Lacking in two parameters	Lacking in one parameter	Fulfills all parameters

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: Traditional fisher knowledge has been investigated. Note that for highly developed fisheries that knowledge may already have been integrated into fisheries management.

Current Status/Appropriateness/Effectiveness: There are records of the documentation of small-scale fisher practices.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fisheries management organization investigates and documents traditional fisheries knowledge and technologies—in particular those applied to small-scale fisheries—in order to assess their application to sustainable fisheries conservation, management, and development. Examples may include various fisheries reports.

4.7 If a fisheries management organization is conducting scientific research activities in waters of another State, it shall ensure that their vessels comply with the laws and regulations of that State and international law.

FAO CCRF (1995) 12.14

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: If the stock is fully managed by one State and there is no need for shared stock research (between two or more States), then this clause is not applicable.

Process: There is a system in place to manage the conduct of research vessels operating in waters of other States.

Current Status/Appropriateness/Effectiveness: If a fisheries management organization is conducting scientific research activities in waters of another State, there is record of such shared research activities and they comply with required regulations.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that if a fisheries management organization is conducting scientific research activities in waters of another State, it ensures that their vessels comply with the laws and regulations of that State and international law. Examples may include survey reports.

4.8 Adoption of uniform guidelines governing fisheries research conducted on the high seas shall be promoted and, where appropriate, support the establishment of policies that include, *inter alia*, facilitating research at the international and sharing the research results with affected States.

FAO CCRF (1995) 12.15, 12.16

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: If the stock is fully managed by one State and there is no need for shared stock research (between two or more States), then this clause is not applicable.

Process: There is a mechanism in place to allow the development and review of guidelines governing fisheries research conducted on the high seas.

Current Status/Appropriateness/Effectiveness: There is a record of uniform high seas research guidelines or a mechanism to create them.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that adoption of uniform guidelines governing fisheries research conducted on the high seas is promoted and, where appropriate, supports the establishment of mechanisms, including, *inter alia*, adopting uniform guidelines to facilitate research at the international level, and encouraging such research results be shared with affected States. Examples may include survey reports, or high seas guidelines.

4.9 If appropriate, the fisheries management organization and relevant international organizations shall promote and enhance the research capacities of developing countries, *inter alia*, in the areas of data collection and analysis, information, science and technology, human resource development, and provision of research facilities, in order for them to participate effectively in the conservation, management, and sustainable use of living aquatic resources.

FAO CCRF (1995) 12.18

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: This clause is only applicable when the unit of certification includes a transboundary, shared, straddling, highly migratory or high seas stock, which is fished by one or more developing States .

Process: There is a mechanism in place by which the research capacities of developing countries can be developed and enhanced. This could include, but is not limited to, the provision of personnel, equipment, funding, or cooperation on data collection and stock assessment.

Current Status/Appropriateness/Effectiveness: There are recognizable examples of instances in the history of the fishery under assessment where actions by the managers of the unit of certification have promoted or enhanced the research capacity of one or more developing nations in the ways described above.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that if appropriate, the fisheries management organization and relevant international organizations promote and enhance the research capacities of developing States, *inter alia*, in the areas of data collection and analysis, information, science and technology, human resource development, and provision of research facilities, in order for them to participate effectively in the conservation, management, and sustainable use of living aquatic resources. Examples may include various data or reports.

4.10 Competent national organizations shall, where appropriate, render technical and financial support to States upon request and when engaged in research investigations aimed at evaluating stocks which have been previously unfished or very lightly fished.

FAO CCRF (1995) 12.19

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: This criterion does not apply to fully developed fisheries, as defined by the FAO. The FAO definition of a developed fishery is "a fishery which, following a period of rapid and steady increase of fishing pressure and catches, has reached its level of maximum average yearly production. It is usually understood that such a fishery is yielding close to its maximum sustainable yield."

Process: There is a mechanism to allow a national organization to render technical and financial support to the State.

Current Status/Appropriateness/Effectiveness: There is a record of the provided technical and financial support.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that competent national organizations, where appropriate, render technical and financial support to States upon request and when engaged in research investigations aimed at evaluating stocks which have been previously unfished or very lightly fished. Examples may include various data or reports.

4.11 Relevant technical and financial international organizations shall, upon request, support States in their research efforts, devoting special attention to developing countries—in particular the least developedamong them and small developing island countries.

FAO CCRF (1995) 12.20

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting allparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: This clause is relevant where the fishery is within a developingregion/small island region and management of the resource is performed through an international organization.

Process: The international management component of the fishery is engaged in processes that support the fishery based in developing countries.

Current Status/Appropriateness/Effectiveness: There is a record of the provided technical and financial support.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that relevant technical and financial international organizations are, upon request, supporting States in theirresearch efforts, and are devoting special attention of developing countries—in particular the least developed among them and small island developing countries. Examples may include various data or reports.

5. There shall be regular stock assessment activities appropriate for the fishery, its range, the species biology, and the ecosystem, undertaken in accordance with acknowledged scientific standards to support its optimum utilization.

FAO CCRF (1995) 7.2.1, 12.2, 12.3, 12.5, 12.6, 12.7, 12.17
FAO Eco (2009) 29–29.3, 31
FAO Eco (2011) 42

5.1 An appropriate institutional framework shall be established to determine the applied research required and its proper use(i.e., assess/evaluate stock assessment model/practices) for fishery management purposes.

FAO CCRF 12.2, 12.6

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is an established institutional framework for fishery management purposes that determines applied research needs and use.

Current Status/Appropriateness/Effectiveness: There is evidence to substantiate that essential research for fishery management purposes is determined and carried out. This research generally includes routine stock(s) and ecosystem assessment reports. Assessors shall evaluate the specific stock assessment model/practices for each of the species under assessment and verify the technical appropriateness for use. For salmon, the assessors shall present and evaluate the methods for escapement goal development utilized to develop the annual escapement goals in Alaska (about 300). Statewide summary data for Alaska can be found in the annually released ADF&G document *Summary of Pacific salmon escapement goals in Alaska with a review of escapements from [year] to [year].* The document generally presents the latest 9–10 years of salmon escapement performance in review.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that an appropriate institutional framework is established to determine the applied research required and its proper use (i.e., assess and evaluate stock assessment models or practices) for fishery management purposes. Examples may include description of the overall process of research assessment and peer review, as well as stock and ecosystem assessment reports.

5.1.1 Less elaborate stock assessment methods are frequently usedfor small-scale or low-value capture fisheries resulting in greater uncertainty about the status of the *stock under consideration.*, A more precautionary approach to managing fisheries on such resources shall be required, including, where appropriate, a lower level of resource utilization. A record of good management performance may be considered as supporting evidence of the adequacy of the management system.

FAO Eco (2011) 42

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *EachEvaluationParameter hasthesamenumerical valueof 3. Meeting all parameters willresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: If the fishery for the *stock under consideration* has sufficient data collected through regular stock assessment activities for its management then this clause can be scored with full conformance.

Process: There is a process that allows more precautionary approaches to managingfisheries (e.g., lowerexploitation rates) on resources assessed throughstock assessment methods that result in greateruncertainty about the state of the *stockunder consideration*.

Current Status/Appropriateness/Effectiveness: There is evidence that precautionary approaches are applied to managing fisheries (e.g., lower exploitation rates) on resources assessed through stock assessment methods that result in greater uncertainty about the state of the *stock under consideration*.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that with less elaborate stock assessment methods frequently used for small-scale or low-value capture fisheries, more precautionary approaches to managing fisheries on such resources are required, including where appropriate, lower level of resource utilization. Examples may include stock assessment reports and other data.

5.1.2 The fisheries management organization shall ensure that appropriate research is conducted into all aspects of fisheries including biology, ecology, technology, environmental science, economics, and fishery enhancement. Analysis results shall be distributed in a timely and readily understandable fashion in order that the best scientific evidence available contributes to fisheries conservation, management, and development. The fisheries management organization shall also ensure the availability of research facilities and provide appropriate training, staffing, and institution building to conduct the research.

FAO CCRF (1995) 12.1, 7.4.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There are organizations and processes in place to permit research into the aspects of fisheries listed in the clause.

Current Status/Appropriateness/Effectiveness: Research is conducted into the following aspects of the fisheries: biology, ecology, technology, environmental science, economics, and aquaculture. The described types of research carried out shall result in the fishery being deemed compliant with this evaluation parameter.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that States are conducting appropriate research into the following aspects of the fisheries: biology, ecology, technology, environmental science, economics, and aquaculture. The research is disseminated accordingly. States also ensure the availability of research facilities and provide appropriate training, staffing, and institution building to conduct the research. Examples may include stock assessment, economic value, fleet reports, and other reports.

5.2 There shall be established research capacity necessary to assess and monitor (1) the effects of climate or other environmental change on stocks and aquatic ecosystems, (2) the status of the stock under State jurisdiction, and (3) the impacts of ecosystem changes resulting from fishing activity, pollution, or habitat alteration.

FAO CCRF (1995) 12.5
FAO Eco (2009) 31

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a system that establishes the required research capacity needed to assess and monitor (1) the effects of climate or other environmental change on stocks and aquatic ecosystems; (2) the status of the stock under State jurisdiction; and (3) the impacts of ecosystem changes resulting from fishing activity, pollution, or habitat alteration. Please note that climate science is complex and evolving, and the system shall recognize the ability to assess and monitor these parameters overtime.

Current Status/Appropriateness/Effectiveness: There is evidence to demonstrate that there is sufficient research capacity in place to assess and monitor (1) the effects of climate or other environmental change on stocks and aquatic ecosystems, (2) the status of the stock under consideration, and (2) the impacts of fishing activity, pollution, or habitat alteration.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there is established research capacity necessary to assess and monitor (1) the effects of climate or other environmental change on stocks and aquatic ecosystems, (2) the status of the stock under State jurisdiction, and (3) the impacts of ecosystem changes resulting from fishing activity, pollution, or habitat alteration. Examples may include stock, ecosystem, and habitat assessment reports.

5.3 Management organizations shall cooperate with relevant international organizations to encourage research in order to ensure optimum utilization of fishery resources.

FAO CCRF (1995) 12.7

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is cooperation or interaction between international organizations to ensure optimum utilization of resource.

Current Status/Appropriateness/Effectiveness: There is evidence available to substantiate that such cooperation or interaction has taken place. There is data available that substantiates cooperation activities.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that management organizations cooperate with relevant international organizations to encourage research in order to ensure optimum utilization of fishery resources. Examples may include outputs resulting from meetings or other research.

5.4 The fishery management organizations shall directly, or in conjunction with other States, develop collaborative technical and research programs to improve understanding of the biology, environment, and status of transboundary, shared, straddling, highly migratory and high seas stocks.

FAO CCRF (1995) 12.7, 12.17

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: Not applicable if stock in not transboundary , shared, straddling, highly migratory or high seas in nature.

Process: The collaborative technical and research programs to improve understanding of the biology, environment, and status of transboundary aquatic stocks have been developed.

Current Status/Appropriateness/Effectiveness: There is evidence available to substantiate that such cooperation or interaction has taken place. There are data on collaborative programs to improve understanding of transboundary, shared, straddling, highly migratory or high seas stocks.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organizations directly, or in conjunction with other States, have developed collaborative technical and research programs to improve understanding of the biology, environment, and status, of transboundary, shared, straddling, highly migratory or high seas stocks. Examples may include outputs resulting from meetings or other research.

5.5 Datagenerated by researchshall be analyzed andtheresults of such analysespublished in a waythat ensures confidentiality is respected, where appropriate.

FAO CCRF (1995) 12.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting <u>all</u>parameterswillresult in a score of 10 (i.e., full conformance). Not meeting <u>any</u> 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting <u>any</u> 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting <u>any</u> 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process that allows analysis of research data, ensuring, where appropriate, their confidentiality.

Current Status/Appropriateness/Effectiveness: There is evidence data was properly analyzed. Data was published respecting, where appropriate, confidentiality agreements. The rules of confidentiality are effectively respected.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that data generated by research is analyzed andtheresults of suchanalysespublished in a waythat ensuresconfidentiality is respected, where appropriate. Examples may include various data or reports.

6. The current state of the stock shall be defined in relation to reference points, relevant proxies, or verifiable substitutes that allow effective management objectives and targets to be set. Remedial actions shall be available and taken where reference points or other suitable proxies are approached or exceeded.

FAO CCRF (1995) 7.5.3, 7.6.1
FAO Eco (2009) 29.2–29.2bis, 29.6, 30–30.2
FAO Eco (2011) 36.2, 36.3, 37, 37.1, 37.2

6.1 The fishery management organization shall establish safe target reference point(s) for management. Management targets are consistent with achieving maximum sustainable yield (MSY), a suitable proxy, or a lesser fishing mortality—if that is optimal in the circumstances of the fishery (e.g., multispecies fisheries) or is needed to avoid adverse impacts on dependent predators.

FAO Eco (2009) 29.2
FAO Eco (2011) 36.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lackingintwoparameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: A target reference point(s) or proxy has been officially established. Managers shall be able to apply technical measures to reduce fishing pressure in the event that reference points are approached or exceeded.

Current Status/Appropriateness/Effectiveness: The official target reference point or proxy is consistent with achieving maximum sustainable yield (MSY), a suitable proxy, or a lesser fishing mortality—if that is optimal in the circumstances of the fishery (e.g., multispecies fisheries) or is needed to avoid severe adverse impacts on dependent predators (e.g. recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible). Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored. Furthermore, there is evidence that the target reference point/management target has been used as an objective by the management process. If there are historical instances of the reference point being approached or exceeded, managers have taken remedial action as appropriate. In the context of reference points, when data are insufficient to estimate reference points directly, other measures of productive capacity can serve as reasonable substitutes or proxies. Suitable proxies may include, for example, standardized Catch per Unit of Effort (CPUE) as a proxy for biomass; or specific levels of fishing mortality and biomass, which have proven useful in other fisheries, can be used with a reasonable degree of confidence in the absence of better defined levels. It is important to note that the use of a proxy may involve additional uncertainty, and if so, should trigger extra precaution in setting biological reference points. For salmon, escapement goals are the equivalent of a target reference point proxy. **Evidence Basis:** The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that target reference points have been established and are consistent with achieving MSY, a suitable proxy, or a lesser fishing mortality—if that is optimal in the circumstances of the fishery (e.g., multispecies fisheries) or is needed to avoid severe adverse impacts on dependent predators. Examples may include stock assessment reports or fishery management plans.

6.2 The fishery management organization shall establish appropriate limit reference point(s) for exploitation (i.e., consistent with avoiding recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible; Appendix 1, Part 1). When a limit reference point is approached, measures shall be taken to ensure that it will not be exceeded. For instance, if fishing mortality (or its proxy) is above the associated limit reference point, actions should be taken to decrease the fishing mortality (or its proxy) below that limit reference point.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: A scientifically based limit reference point or proxy has been officially established, and together with the measure to be taken, ensures the reference point(s) will not be exceeded.

Current Status/Appropriateness/Effectiveness: The stock under assessment shall not currently be overfished (see glossary) according to the best scientific evidence available. The stock is currently estimated to be on the sustainable side of this reference point (e.g., spawning stock biomass is above the limit reference point, F is below F_{lim}, etc.). F_{lim} shall not exceed F_{msy}. The limit reference point or proxy is consistent with avoiding recruitment overfishing and other severe negative impacts on the stock. There are mechanisms in place (e.g., harvest control rule or mechanism) to ensure that the level of fishing pressure is reduced if the limit reference point is approached or reached, and these mechanisms are consistent with ensuring to a high degree of certainty that the limit reference point will not be exceeded, and that actions are taken to decrease the fishing mortality (or its proxy) below that limit reference point. The level of B_{lim} should be set on the basis of historical information, applying an appropriate level of precaution according to the reliability of that information. In addition, an upper limit should be set on fishing mortality, F_{lim}, which is the fishing mortality rate that, if sustained, would drive biomass down to the B_{lim} level. It is important to clarify that for salmon, spawning escapement goals are a suitable proxy for the intent of this clause. Escapement goal performance over a 4- to 5-year period shall be considered a suitable minimum reference point for salmon management. Specific to this point, underperforming salmon stocks that do not meet their escapement goals for a sustained period (over 4–5 years) shall be appropriately managed within the *stock of concern* framework by the State of Alaska to ensure stocks are managed with the objective of returning them to safe biological targets.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are established safe limit reference point(s) for exploitation (i.e., consistent with avoiding recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible). When a limit reference point is approached, measures are taken to ensure that it will not be exceeded. For instance, if fishing mortality (or its proxy) is above the associated limit reference point, actions are taken to decrease the fishing mortality (or its proxy) below that limit reference point. Examples may include stock assessment reports or fishery management plans.

6.3 Data and assessment procedures that measure the position of the fishery in relation to the reference points shall be established. Accordingly, the *stock under consideration* shall not be overfished (i.e., above limit reference point or proxy) and the level of fishing permitted shall be commensurate with the current state of the fishery resources, maintaining its future availability, and taking into account that long-term changes in productivity can occur due to natural variability and/or impacts other than fishing (Appendix 1, Part 1).

FAO CCRF (1995) 7.5.3, 7.6.1
FAO Eco (2009) 29.2–29.2bis, 29.6, 30–30.2FAO Eco (2011) 36.2, 36.3, 37, 37.1, 37.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10

Lacking in three or more parameters	Lacking in two parameters	Lacking in one parameter	Fulfills all parameters

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: Data and assessment procedures (i.e., stock assessment process) are in place to measure the position of the fishery in relation to the target and limit reference points.

Current Status/Appropriateness/Effectiveness: The current stock status in relation to reference points is used to determine the level of fishing permitted. The latter is commensurate with the current state of the fishery resources (i.e., close to or above target reference point and most importantly, not overfished or at or below its limit reference point or proxy), and takes into account that long-term changes in productivity can occur due to natural variability and/or impacts other than fishing. The stock is positioned at or above the target reference point. As a minimum, the stock is located above the midway point between the target and the limit reference point. It is important to clarify that, for salmon, spawning escapement goals are a suitable proxy for the intent of this clause. Escapement goal performance over a 4- to 5-year period shall be considered as a suitable minimum reference point for salmon management. Underperforming salmon stocks that do not meet their escapement goals for a sustained period (over 4– 5 years) shall be appropriately managed within the *stock of concern* framework by the State of Alaska to return them to safe biological targets. Assessors shall present evidence and evaluate escapement goals and escapement goal performance (i.e., met, not met) for all the wild salmon stock with a formal escapement goal in force in Alaska (about 300 annually). Overall, statewide summary data for Alaska can be found in the annually released ADF&G document *Summary of Pacific salmon escapement goals in Alaska with a review of escapements from [year] to [year]*. The document generally presents the latest 9–10 years of salmon escapement performance in review.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that data and assessment procedures are installed measuring the position of the fishery in relation to the reference points. Accordingly, the *stock under consideration* is not overfished (i.e., it is above limit reference point or proxy) and the level of fishing permitted is commensurate with the current state of the fishery resources—maintaining its future availability and taking into account that long-term changes in productivity can occur due to natural variability and/or impacts other than fishing. Examples may include stock assessment reports or fishery management plans.

6.4 Management actions shall be agreed to in the eventuality that data sources and analyses indicate that these reference points have been exceeded. Accordingly, contingency plans shall be agreed in advance to allow an appropriate management response to serious threats to the resource as a result of overfishing, adverse environmental changes, or other phenomena that may have adverse e on impacts on the fishery resource (Appendix 1, Part 2). Such measures may be temporary and shall be based on best scientific evidence available.

FAO CCRF (1995) 7.5.3, 7.5.5
FAO Eco (2009) 29.6, 30.2
FAO Eco (2011) 36.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	Lacking in two parameters	Lacking in one parameter	Fulfills all parameters

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is an agreed process, system, or contingency plan in the eventuality that the data sources and analyses indicate that these reference points have been exceeded—detailing the appropriate management response to serious threats to the

resource because of overfishing, adverse environmental changes, or other phenomena that may have adverse impacts on the fishery resource. Accordingly, the contingency plan/harvest control rule shall be agreed in advance to allow an appropriate management response to serious threats to the resource because of overfishing, adverse environmental changes, or other phenomena that may have adverse impacts on the fishery resource.

Current Status/Appropriateness/Effectiveness: In the eventuality that the current level of the stock has exceeded target or limit reference points, the agreed and corresponding management action (as directed by the harvest control rule or framework) shall be immediately implemented and fishing reduced or halted as necessary. The harvest control rule is effective at keeping or bringing back the stock to acceptable and safe biological levels (i.e., to avoid overfishing/ed status). Underperforming salmon stocks that do not meet their escapement goals shall be appropriately managed within the *stock of concern* framework by the State of Alaska.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that management actions are agreed should data sources and analyses indicate that these reference points have been exceeded. Accordingly, contingency plans are agreed in advance for the appropriate management response to serious threats to the resource as a result of overfishing, adverse environmental changes, or other phenomena that may have adverse impacts on the fishery resource. Such measures may be temporary and are based on best scientific evidence available. Examples may include stock assessment reports or fishery management plans.

6.5 Measures shall be introduced to identify and protect depleted stocks and those stocks threatened with depletion, and to facilitate the sustained recovery/restoration of such stocks. Also, efforts shall be made to ensure that resources and habitats critical to the well-being of such stocks, which have received adverse impacts by fishing or other human activities, are restored.

FAO CCRF (1995) 7.6.10
FAO Eco (2009) 30

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process that identifies depleted stocks, resources, and habitats. A depleted stock is usually a stock, which has been overfished, the stock status is below limit reference point, and the ability of the stock to recover has been impaired.

Current Status/Appropriateness/Effectiveness: There is evidence that where depleted or adversely impacted stocks, resources, and habitats have been identified, efforts have been made to ensure they are restored or allowed to recover (i.e., ideally within a two generations timescale). Underperforming salmon stocks that do not meet their escapement goals shall be appropriately managed within the *stock of concern* framework by the State of Alaska.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that measures are introduced to identify and protect depleted stocks and those stocks threatened with depletion, and to facilitate the sustained recovery/restoration of such stocks. Also, efforts are made to ensure that resources and essential habitats critical to the well-being of the stocks, which have been adversely impacted by fishing or other human activities, are restored. Examples may include laws and regulations, fishery management plans, and stock assessment reports.

7. Management actionsand measures for the conservation of stockand the ecosystem shall be based on the precautionary approach. Where information is deficient a suitable method using risk management shall be adopted to consideruncertainty.

FAO CCRF (1995) 7.5.1, 7.5.4, 7.5.5, 12.3
FAO Eco (2009) 29.6/32
FAO Eco (2011) 36.7

7.1 The precautionary approach shall be applied widely to conservation, management, and exploitation of ecosystems to protect them and preserve the ecosystem. This should take due account of fishery enhancement procedures, where appropriate. Absence of scientific information shall not be used as a reason for postponing or failing to take conservation and management measures. Relevant uncertainties shall be taken into account through a suitable method of risk management, including those associated with the use of introduced or translocated species.[1]

FAO Eco (2009) 29.6
FAO Eco (2011) 36.7

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lackingin oneparameter**	**Fulfills all parameters**

Evaluation Parameters

ScoreCalculationProcedure:*EachEvaluationParameterhasthesamenumericalvalueof3. Meetingallparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There are management measures, regulations, and laws that command or direct the use of the precautionary approach (PA) for conservation, management, and exploitation of the aquatic resources under assessment. This could either take the form of an explicit commitment to the application of the PA, or be evidenced by an overarching approach applied throughout the managementliterature.

Current Status/Appropriateness/Effectiveness: The FAO Guidelines for the PA for fisheries management (FAO CCRF 1995) advocate a comprehensive management process that includes data collection, monitoring, research, enforcement, and review. More specifically, prior identification of desirable (target) and undesirable (limit) reference points must be carried out, and measures are required that will avoid undesirable outcomes with high probability and correct them promptly should they occur. The guidelinessuggestthat this be achievedthrough rulesthat specify in advance what actionshould betakenwhen specified deviations from operational targets are observed (i.e., harvest control rules). Furthermore, the guidelines suggest that a management plan should not be accepted until it has been shown to perform effectively in terms of its ability to avoid undesirable outcomes (for example through simulation trials). Lastly, the absence of adequate scientific information should not be used as a reason for postponing or failing to take measures to conserve target species, associated or dependent predator, or non-target species and their environment (https://www.sciencebase.gov/catalog/item/50538887e4b097cd4fce2446). There is evidence for the practical application of the PA for resource management and conservation. Note that the PA may be integrated into stock assessment practices, specific management measures enacted for everyday fisheries operations, or other measures. Application of the PA considers enhanced fisheries (e.g., at the policy level) where appropriate, and relevant uncertainties are considered using a suitable method of risk management (e.g., evaluation of potential impacts of increased hatchery releases on wild salmon), including that associated with the use of introduced or translocated species.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the PA is applied to conservation, management, and exploitation of an ecosystem to protect them and preserve the ecosystem. Examples may include stock assessment reports, fishery management plans and other documents.

[1] FAO Technical Guidelines for Responsible Fisheries No. 2 – Precautionary approach to capture fisheries and species introductions. http://www.fao.org/docrep/003/w3592e/w3592e00.htm

7.1.1 In implementingthe PA, the fishery management organization shalltakeinto account, *inter alia*, uncertainties relating to the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distribution of fishing mortality, the impact of fishing activities (including discards) on non-target and associated or dependent predators, and environmental and socioeconomic conditions.

FAO CCRF (1995) 7.5.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting allparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a system in place under which the potential uncertainties listed above can be examined and taken into account during the decision-making process.

Current Status/Appropriateness/Effectiveness: There is evidence to demonstrate that in the fishery under assessment, uncertainties considered include those associated with the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distribution of fishing mortality and the impact of fishing activities (including discards) onnon-target andassociated or dependent predators, aswell as environmentaland socio-economicconditions.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in implementing the PA, thefisherymanagementorganizationtakesinto account,*interalia*, uncertaintiesrelatingtothesizeand productivity of the stocks,referencepoints,stockcondition inrelationto suchreferencepoints,levels and distribution offishingmortalityandthe impact of fishing activities (including discards) on non-target and associated or dependent species, as well as environmental and socio-economic conditions.Examples mayinclude stock assessment reports, fishery management plans and other documents.

7.1.2 In the absence of adequate scientific information, appropriate research shall be initiated in a timely fashion.

FAO CCRF (1995) 7.5.1, 12.3
FAO Eco (2009) 29.6, 32

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process that identifies weaknesses in the scientific information available to fishery management organizations, and initiates additional research as necessary. The primary focus of this requirement is the status of the *stocks under consideration*.

Current Status/Appropriateness/Effectiveness: There is evidence that such a process has been applied in the case of the fishery under assessment, including examples of initiated research. Depending on the situation, appropriate research or further analysis of the identified risk is initiated in a timely fashion.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the absence of adequate scientific information, appropriate research is initiated in a timely fashion. Examples may include various data or scientific reports.

7.2 In the case of new or exploratory fisheries, thefishery management organization shall adopt, as soon as possible, cautiousconservation and management measures, including, *inter alia*, catchlimits and effort limits. Such measures should remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment should be implemented. Management measures should, if appropriate, allow for the gradual development of the fisheries.

FAO CCRF (1995) 7.5.4

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting allparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: This clause is only applicable for new or exploratory fisheries.

Process: For new or exploratory fisheries, there is a process that allows immediate application of the PA, including catch and effort limits, and the possible adverse impact of such fisheries on the long-term sustainability of the stocks.

Current Status/Appropriateness/Effectiveness: There is evidence that catch and effort limits have been implemented, and other management measures, includingtheassessment of possible adverseimpacts, havebeen performedforthesefisheries.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the case of new or exploratory fisheries, the fishery managementorganizationadopts, as soon as possible, cautiousconservation and management measures, including, *inter alia*, catch and effort limits. Such measures remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment are implemented. Management measures should, if appropriate, allow for the gradual development of the fisheries. Examples may include various data or scientific reports.

C. Management Measures, Implementation, Monitoring and Control

8. Management shall adopt and implement effective management measures designed to maintain stocks at levels capable of producing maximum sustainable yields, including harvest control rules and technical measures applicable to sustainable utilization of the fishery, and based upon verifiable evidence and advice from available objective scientific and traditionalsources.

FAO CCRF (1995) 7.1.1, 7.1.2, 7.1.6, 7.4.1, 7.6.1, 7.6.9, 12.3
FAO Eco (2009) 29.2, 29.4, 30
FAO Eco (2011) 36.2, 36.3

8.1 Conservation and management measures shall be designed to ensure the long-term sustainability of fishery resources at levels which promote optimum utilization, and are based on verifiable and objective scientific and/or traditional, fisher, or community sources.

FAO CCRF (1995) 7.1.1; Others 7.4.1, 7.6.7
FAO Eco (2009) 29.2, 29.4
FAO Eco (2011)36.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: The process by which management measures are developed for the fishery utilizes the best scientific evidence available, including traditional sources where these are verifiable, and also considers the cost-effectiveness and social impact of potential new measures. The assessment team shall provide evidence for the main type of management measures present in the fishery. Some of the main examples may include (but are not limited to) legal gear specifications, permit requirements, observer requirements, reporting requirements, limited access, vessel license limitations, size limits, sex restrictions, total allowable catch, in season adjustments, fishing seasons, geographical registrations areas, bycatch reduction devices, gear modification, minimizing waste and ghost fishing, closed waters, catch limits for other fisheries, and bycatch management.

Current Status/Appropriateness/Effectiveness: There is evidence that the overall framework of management measures in place is effective at achieving the long-term optimum yield, which is defined by the FAO as "the harvest levels for a species that achieves the greatest overall benefits, including economic, social and biological considerations." If the stock has been maintained above the limit reference point, this shall be taken as evidence that management measures are effective in avoiding overfishing.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that conservation and management measures are designed to ensure the long-term sustainability of fishery resources at levels which promote optimum utilization, and are based on verifiable and objective scientific and/or traditional, fisher, or community sources. Examples may include reports, fishery management plans, regulations, or other management measures.

8.1.1 Whenevaluatingalternativeconservation and managementmeasures, thefisherymanagement organization shall consider their cost-effectiveness and social impact.

FAO CCRF (1995) 7.6.7

Critical NC	Major NC	Minor NC	Full Conformance

Score = 1	Score = 4	Score = 7	Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: The process by which management measures are developed for the fishery allows for consideration of the cost-effectiveness and social impact of potential new or modified management measures.

Current Status/Appropriateness/Effectiveness: There is evidence for the consideration of the cost-effectiveness and social impact of potential new or modified management measures.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the evaluation of alternative conservation and management measures, their cost-effectiveness and social impact are considered. Examples may include reports, fishery management plans, regulations or other management measures.

8.1.2 Responsiblefisheries management organizations shall adopt and implement measures necessary to ensure the management of bycatch and reduction of discards as part of fisheries management (1) in accordance with the PA, as reflected in Article 6 of the UN Fish Stocks Agreement, and as set out in Article 6.5 and 7.5 of the Code; (2) in accordance with the responsible use of fish as set out in the Code; and (3) based on the best scientific evidence available, taking into account fishers' knowledge.

FAO IGBD (2011) 3.2.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

ScoreCalculationProcedure:*EachEvaluationParameterhasthesamenumericalvalueof3. Meetingallparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: Theresponsible fisheries managementorganizations has adopted and implementedeffectivemeasures necessary to ensure the management of bycatch and reduction of discards as part of fisheries management.

Current Status/Appropriateness/Effectiveness: There is evidence of adoption and implementation of effective measures to ensure the management of bycatch and reduction of discards as part of fisheries management (1) in accordance with the PA, as reflected in Article 6 of the UN Fish Stocks Agreement, and as set out in Article 6.5 and 7.5 of the Code; (2) in accordance with the responsible use of fish as set out in the Code; and (3) based on the best scientific evidence available, taking into account fishers' knowledge. Please note that traditional knowledge should be verifiable. The strategy to ensure the management of bycatch and reduction of discards as part of fisheries management is being implemented successfully (e.g., there is a well-known track record of consistently setting conservative bycatch limits based on quality information and advice about bycatch); or bycatch is minimized to the greatest extent possible, especially for vulnerable species such as sharks, seabirds, turtles, and marine mammals, through mitigation measures that have been shown to be highly effective (e.g., observer coverage and procedures, bycatch caps, utilization measures, full catch accounting, on-deck techniques, avoidance mechanisms and gear technology, etc.). Also, thefishery is not a leading cause of a high level of mortalityfor any species of concern (e.g., not a Category I fishery for marine mammal bycatch as designated by the National Marine Fisheries Service).

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the responsible fisheries management organizations have adopted and implementedeffectivemeasures necessary to ensure the management of bycatch and reduction of discards as part of fisheries management. Examples may include stock assessment, bycatch or otherecosystem assessment reports.

8.2 The fishery management organization shall prohibit dynamiting, poisoning, and other similar destructive fishing practices.

FAO CCRF (1995) 8.4.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There are management measures, or regulations, or laws that prohibit destructive fishing practices.

Current Status/Appropriateness/Effectiveness: The regulations or laws effectively prohibit dynamiting, poisoning, and other similar destructive fishing practices.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization prohibits dynamiting, poisoning, and other similar destructive fishing practices. Examples may include laws, fishery management plans, regulations, and enforcement data.

8.3 The fishery management organization shall seek to identify domestic parties having a legitimate interest in the use and management of the fishery. When deciding on use, conservation, and management of the resource, due recognition shall be given, where relevant, in accordance with national laws and regulations, to the traditional practices, needs, and interests of indigenous people and local fishing communities which are highly dependent on these resources for their livelihood. Arrangements shall be made to consult all the interested parties and gain their collaboration in achieving responsible fisheries.

FAO CCRF (1995) 7.1.2, 7.1.6, 7.6.6

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process that allows for identifying and consulting with domestic parties (giving due recognition where relevant, in accordance with national laws and regulations, to the traditional practices, needs, and interests of indigenous people and local fishing communities which are highly dependent on these resources for their livelihood) having a legitimate interest in the use and management of the fisheries resource.

Current Status/Appropriateness/Effectiveness: In accordance with national laws and regulations, there is evidence that domestic parties having a legitimate interest in the use and management of the fishery (as described above) have been identified and encouraged to collaborate in the fisheries management process.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization seeks to identify domestic parties having a legitimate interest in the use and management of the fishery. When deciding on use, conservation, and management of the resource, due recognition is given, where relevant, in accordance with national laws and regulations, to the traditional practices, needs, and interests of indigenous people and local fishing communities which are highly dependent on these resources for their livelihood. Arrangements are made to consult all the interested parties and gain their collaboration in achieving responsible fisheries. Examples may include laws, fishery management plans, regulations, and meeting records.

8.4 Where excess capacity exists, mechanisms shall be established to reduce capacity to levels commensurate with sustainable use of theresource. Fleet capacity operating in the fisheryshall be measured and monitored. Thefishery management organization shall maintain, in accordance with recognized international standards and practices, statistical data, updated at regular intervals, on all fishing operations and a record of all authorizations to fish allowed by them.

FAO CCRF (1995) 7.1.8, 7.6.3, 8.1.2, 8.1.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *EachEvaluationParameter has thesamenumerical valueof 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There isa systemto measure fleet capacity and maintain regularly updated data on allfishing operations. Research has been conducted to determine or estimate the fishing capacity commensurate with the sustainable use of the resource. There aremechanisms in place tomeasurethetotalfishingcapacity within the unit of certification, and toreducethis capacity if it is determined to exceed the sustainable level.

Current Status/Appropriateness/Effectiveness: There is evidence of the size of fleet capacity, and of data describing fishing operation, and that the mechanisms described above are successful at maintaining the effective fishing capacity of the unit of certification at a level commensurate with the sustainable use of the resource. Management mechanisms, which restrict the application of fishing capacity, such as quotas, shall be considered valid mechanisms in relation to this parameter. The core emphasis of this requirement is to ensure that exploitation is sustainable. Assessment teams should ensure that fisheries are within catchlimit recommendations to determine whether excesscapacity is having an effect onresourceoverexploitation.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that fleet capacity operating in the fishery is monitored and measured, and statistical data on all fishing operations allowed is updated and maintained. Where excess capacity exists, mechanisms are established to reduce capacity to levels commensurate with sustainable use of the resource. Examples may include fleet reports or other documents or reports.

8.4.1 Studies shall be promoted that provide an understanding of the costs, benefits, and effects of alternative management optionsdesigned torationalizefishing, especially optionsrelating to excessfishing capacityand excessive levels of fishing effort.

FAO CCRF (1995) 7.4.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting allparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a need and a process that allows, as appropriate, for studies to understand the costs, benefits, and effects of alternative management options designed to rationalize fishing.

Current Status/Appropriateness/Effectiveness: There is evidence for studies conducted on alternative management options designed to rationalize fishing.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that studies are promoted thatprovide an understanding of the costs, benefits, and effects of alternative management options designed to rationalize fishing, especially options relating to excess fishing capacity and excessive levels of fishing effort. Examples mayinclude various evaluation or reports on fishing rationalization.

8.5 Technical measures regarding the *stock under consideration* shall be taken into account, where appropriate, in relation to fish size, mesh size, gear, closed seasons or areas, areas reserved for particular (e.g., artisanal fisheries), and protection of juveniles or spawners.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: The management system has taken into account technical measures, where and as appropriate (i.e., some fisheries do not have the requirement for a minimum fish size), to the fishery and stock under assessment, in relation to fish size, mesh size, gear, closed seasons, closed areas, areas reserved for particular (e.g., artisanal) fisheries, and protection of juveniles or spawners.

Current Status/Appropriateness/Effectiveness: Technical measures are related to sustainability objectives, ensuring sustainable exploitation of the target species, and minimizing the potential negative impacts of fishery activities on non-target species, ETP species, and the physical environment.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that technical measures regarding the *stock under consideration* are taken into account, where appropriate, in relation to fish size, mesh size, gear, closed seasons, closed areas, areas reserved for particular (e.g., artisanal) fisheries, and protection of juveniles or spawners. Examples may include fishery management plans, regulations or various other reports.

8.5.1 Appropriatemeasures shall be applied to minimizecatch, waste, and discards of non-target species (both fish and non-fish species), and impacts on associated, dependent, or endangered species.

FAO CCRF (1995) 7.6.9
FAO Eco (2009) 31.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *EachEvaluationParameter hasthesamenumerical valueof 3. Meeting all parameters willresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a mechanism by which management measures are developed to minimize the catch, waste and discarding of non-target species and the impact of thefishery on associated, dependent, and ETP species. This systemshall include the development of specific management objectives.

Current Status/Appropriateness/Effectiveness: There are measures in place to minimize catch, waste, and discards of non-target species (both fish and non-fish species). These measures are considered effective at achieving the specific management objectives described in the process parameter.

There are measures in place to minimize impacts on associated, dependent, or endangered species. These measures are considered effective at achieving the specific management objectives described in the process parameter.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that appropriate measures are applied to minimize catch, waste and discards of non-target species (both fish and non-fish species), and impacts on associated, dependent, or endangered species. Examples may include various stock and ecosystems assessment reports.

8.6 Fishing gear shall be marked in accordance with the State's legislation in order that the owner of the gear can be identified. Gear marking requirements shall take into account uniform and internationally recognizable gear marking systems.

FAO CCRF (1995) 8.2.4

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is regulation for gear marking.

Current Status/Appropriateness/Effectiveness: Fixed gear is marked according to national legislation, and lost fixed gear can be identified back toowner.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that fishing gear is marked in accordance with State's legislation in order thatthe owner of the gear can be identified. Gearmarking requirements take into account uniform and internationally recognizable gear marking systems. Examples may include various fleet reports and regulations.

8.7 The fishery management organization and relevant groups from the fishing industry shall measure performance and encourage the development, implementation, and use of selective, environmentally safe, and cost-effective gear, technologies, and techniques that are sufficiently selective as to minimize catch, waste, discards of non-target species (both fish and non-fish species), and impacts on associated or dependent predators. The use of fishing gear and practices that lead to discarding the catch shall be discouraged, and the use of fishing gear and practices that increase survival rates of escaping fish shall be promoted. Inconsistent methods, practices, and gears shall be phased out accordingly.

FAO CCRF (1995) 7.2.2, 7.6.4, 7.6.9, 8.4.5, 8.5.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: The management system and relevant groups from the fishing industry have encouraged the development of technologies and operational methods to reduce waste and discard of the target species. Relevant groups includes fishers, processers, distributers, and marketers. There are mechanisms in place by which the selectivity, environmental impact, and cost-effectiveness of gears included in the unit of certification are measured.

Current Status/Appropriateness/Effectiveness: Such technologies and operational methods have been implemented. The methods in use are effective in reducing waste and discards of the non-target species. There is evidence that the gears used in the fishery are appropriate, in terms of selectivity, environmental impact, and cost-effectiveness, as assessed by the responsible scientific authority of the fishery. Methods shall be considered successful if there is evidence that the fishery under assessment is not causing significant risk of overfishing to non-target species.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization and relevant groups from the fishing industry measure performance and encourage the development, implementation, and use of selective, environmentally safe, and cost effective gear, technologies and techniques, that are sufficiently selective as to minimize catch, waste, discards of non-target species (both fish and non-fish species), and impacts on associated or dependent species. Examples may include various reports, regulations, or other data.

8.8 Technologies, materials, and operational methods or measures—including, to the extent practicable, the development and use of selective, environmentally safe, and cost effective fishing gear and techniques—shall be applied to minimize the loss of fishing gear, the ghost fishing effects of lost or abandoned fishing gear, pollution, and waste.

FAO CCRF (1995) 7.2.2, 8.4.6, 8.4.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There has been development of technologies, materials, and operational methods that minimize the loss of fishing gear, the ghost fishing effects of lost or abandoned fishing gear, and a system to minimize pollution and waste.

Current Status/Appropriateness/Effectiveness: Technologies, materials, and operational methods that minimize the loss of fishing gear and ghost fishing by lost or abandoned gear are applied whenever appropriate. Also, these measures are effective in minimizing, to the extent practicable, pollution and waste.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that technologies, materials, and operational methods or measures—including, to the extent practicable, the development and use of selective, environmentally safe, and cost effective fishing gear and techniques—are applied to minimize the loss of fishing gear, the ghost fishing effects of lost or abandoned fishing gear, pollution, and waste. Examples may include various regulations, data, and reports.

8.9 The intent of fishing selectivity and fishing impacts-related regulations shall not be circumvented by technical devices. Information on new developments and requirements shall be made available to all fishers.

FAO CCRF (1995) 8.5.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a system that makes available information on new developments and requirements to all fishers to avoid circumvention of fishing regulations.

Current Status/Appropriateness/Effectiveness: The adopted methods are successful and effective and fishing regulations are made known to the participants. Enforcement data are highlighting significant violations.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the intent of fishing selectivity and fishing impacts-related regulations is not circumvented by technical devices. Information on new developments and requirements is made available to all fishers. Examples may include various data and reports.

8.10 Assessment and scientific evaluation shall be carried out on the impacts of habitat disturbance on the fisheries and ecosystems prior to the commercial-scale introduction of new fishing gear, methods, and operations. Accordingly, the impacts of such introductions shall be monitored.

FAO CCRF (1995) 8.4.7, 12.11

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: This clause is not applicable if new gear has not been introduced in the past 3 years.

Process: New gear has been recently introduced on a commercial scale within the last 3 years, or there is a plan to introduce new gear in the foreseeable future.

Current Status/Appropriateness/Effectiveness: An appropriate assessment of potential impacts has been carried out. There is evidence to suggest that the assessment is adequate to support habitat conservation and fishery management purposes. Additionally, there is a monitoring regime in place.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that assessment and scientific evaluation is carried out on the implications of habitat disturbance impact on the fisheries and ecosystems prior to the commercial-scale introduction of new fishing gear, methods, and operations. Accordingly, the effects of such introductions are monitored. Examples may include various regulations, data, and reports.

8.11 Internationalcooperationshall be encouragedfor researchprogramsinvolvingfishinggear selectivity, fishing methods and strategies, dissemination of the results of such research programs, and the transfer of technology.

FAO CCRF (1995) 8.5.4

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *EachEvaluationParameterhasthesamenumericalvalueof3. Meeting<u>all</u>parameterswillresult in a score of 10 (i.e., full conformance). Not meeting<u>any</u>1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting<u>any</u>2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting<u>any</u>3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a system of international information exchange to allow knowledge to be shared.

Current Status/Appropriateness/Effectiveness: There is evidence for international information exchange, such as meeting records or other information.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that international cooperationis encouraged for researchprogramsinvolvingfishinggear selectivity,fishing methods and strategies,dissemination oftheresultsofsuchresearch programs,andthetransferoftechnology. Examplesmayinclude various data and reports.

8.12 Thefishery management organization and relevant institutions involved in thefishery shall collaborate in developing standard methodologiesfor research into fishing gear selectivity, fishing methods and strategies, and on the behavior of target and non-target species regarding such fishing gear—as an aid for management decisions and with a view to minimizing non-utilized catches.

FAO CCRF (1995) 8.5.3, 12.10

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *EachEvaluationParameter hasthesamenumerical valueof 3. Meeting all parameters willresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is collaborative research into fishing gear selectivity, fishing methods, and strategies.

Current Status/Appropriateness/Effectiveness: There is evidence of such research, and the results have been applied accordingly in fisheriesmanagement.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization and relevant institutions involved in the fishery collaborate in developing standard methodologies for research into fishing gear selectivity, fishing methods and strategies, and on the behavior of target and non-target species in relation to such fishing gear—as an aid for managementdecisions and with a view to minimizing non-utilized catches. Examples may include various data and reports.

8.13 Where appropriate, policies shall be developed for increasing stock populations and enhancing fishing opportunities through the use of artificial structures. The fishery management organization shall ensure that, when selecting the materials to be used in the creation of artificial reefs, as well as when selecting the geographical location of such artificial reefs, the provisions of relevant international conventions concerning the environment and the safety of navigation are observed.

FAO CCRF (1995) 8.11.1, 8.11.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: The use of artificial structures may be appropriate for some stocks but not necessary for all. This clause may therefore not be applicable if such structures are not practical or appropriate for stocks. The use of artificial structures should be considered appropriate if one or more of the stocks under consideration has benefitted from the use of artificial structures in other fisheries, or if species with similar biological characteristics have benefitted from the use of artificial structures in other fisheries.

Process: There is a mechanism in place for identifying potential for increasing stock populations and enhancing fishing opportunities through the use of artificial structures. This mechanism ensures that where artificial structures are deemed appropriate, environmental protection, safety, and navigation are considered in their application.

Current Status/Appropriateness/Effectiveness: This mechanism has been applied to the stocks under consideration, resulting in the conclusion to either use artificial structures, or that artificial structures are inappropriate. Care has been taken in the selection of materials to use in constructing artificial reefs, the selection of sites for their deployment, and to ensure that relevant conventions concerning the environment and the safety of navigation have been observed.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that where appropriate, policies are developed for increasing stock populations and enhancing fishing opportunities through the use of artificial structures. The fishery management organization shall also ensure that, when selecting the materials to be used in the creation of artificial reefs, as well as when selecting the geographical location of such artificial reefs, the provisions of relevant international conventions concerning the environment and the safety of navigation are observed. Examples may include various laws, data and reports.

9. Fishing operations shall be carried out by fishers with appropriate standards of competence in accordance with international standards, guidelines and regulations.

FAO CCRF (1995) 8.1.7, 8.1.10, 8.2.4, 8.4.5

9.1 States shall advance, through education and training programs, the education and skills of fishers and, where appropriate, their professional qualifications. Such programs shall take into account agreed international standards and guidelines.

FAO CCRF (1995) 8.1.7, 8.4.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There are implemented education programs for fishers (e.g., health and safety, fisheries management framework, rule and regulation, etc.).
Current Status/Appropriateness/Effectiveness: These programs are effective in training fishers, in line with international standards and guidelines.
Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that States enhance, through education and training programs, the education and skills of fishers and, where appropriate, their professional qualifications. Such programs take into account agreed international standards and guidelines. Examples may include various data, websites.

9.2 States, with the assistance of relevant international organizations, shall endeavor to ensure, through education and training, that all those engaged in fishing operations be given information on the most important provisions of the FAO CCRF (1995), as well as provisions of relevant international conventions and applicable environmental and other standards that are essential to ensure responsible fishing operations.

FAO CCRF (1995) 8.1.10

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There are relevant measures of the FAO CCFR and other applicable environmental and other standards being exposed to fishers for their training.

Current Status/Appropriateness/Effectiveness: These programs are effective in training fishers, in line with international standards, guidelines, and key CCRF principles. The presence of general training programs for fishermen (e.g., health and safety, fisheries management framework, rule and regulation, etc.) shall be evidence that the key principles of the CCRF have been filtered down from management to fishermen. Furthermore, the existence of laws and regulation with which fishermen are compliant demonstrate further compliance to this clause.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that States, with the assistance of relevant international organizations, endeavor to ensure, through education and training, that all those engaged in fishing operations be given information on the most important provisions of the FAO CCRF, as well as provisions of relevant international conventions and applicable environmental and other standards that are essential to ensure responsible fishing operations. Examples may include various data, websites.

9.3 Thefisherymanagement organization shall, as appropriate, maintainrecords of fisherswhichshall, whenever possible, contain information on their service and qualifications, including certificates of competency, in accordance with their State's laws.

FAO CCRF (1995) 8.1.8

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**
Evaluation Parameters ***Score Calculation Procedure:*** *EachEvaluationParameter hasthesamenumerical valueof 3. Meeting all parameters willresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*			
Process: There is a system to collect and maintain fisher records. **Current Status/Appropriateness/Effectiveness**: These records are considered accurate and effective for management purposes. **Evidence Basis:** The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization maintains, as appropriate, records of fishers which, whenever possible, contain information on their service and qualifications, including certificates of competency, in accordance with their national laws. Examples may include various data orreports.			

10. An effective legal and administrative framework shall be established and compliance ensured, through effective mechanisms for monitoring, surveillance, control, and enforcement for all fishing activities within the jurisdiction.

FAO CCRF (1995) 7.1.7, 7.7.3, 7.6.2, 8.1.1, 8.1.4, 8.2.1
FAO Eco (2009) 29.5
FAO Eco (2011) 36.6

10.1. Effective mechanisms shall be established for fisheries monitoring, surveillance, control, and enforcement measures including, where appropriate, observer programs, inspection schemes, and vessel monitoring systems, to ensure compliance with the conservation and management measures for the fishery in question.

This could include relevant traditional, fisher, or community approaches, provided their performance could be objectively verified.

FAO CCRF (1995) 7.1.7; Others 7.7.3, 8.1.1
FAO Eco (2009) 29.5
FAO Eco (2011) 36.6

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There are clear mechanisms established for fisheries monitoring, surveillance, control, and enforcement.

Current Status/Appropriateness/Effectiveness: These mechanisms are effective, and include effective observer programs, inspection schemes, and vessel monitoring systems where appropriate for the type of fishery under assessment. Monitoring, surveillance, control, and enforcement mechanisms can be considered effective if they are sufficiently broad to cover the entirety of the unit of certification, there is evidence that rules and regulations are consistently enforced, and there is no evidence of frequent or widespread violation of fishery regulations. This could include relevant traditional, fisher, or community approaches, provided their performance could be objectively verified. With respect to fisheries on the high seas, the legal obligations of UNCLOS and UNFSA have particular relevance. Evidence of the performance of the legal framework can be derived from assessing conformance with requirements covering compliance and enforcement. Specifically, the assessment team shall document the general level/type of fisheries controls (e.g., number of boarding's, reprimands) and the respective level of fisheries violations (e.g., %) on a yearly basis.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that effective mechanisms are established for fisheries monitoring, surveillance, control, and enforcement measures including, where appropriate, observer programs, inspection schemes, and vessel monitoring systems, to ensure compliance with the conservation and management measures for the fishery in question. This could include relevant traditional, fisher or community approaches, provided their performance could be objectively verified. Examples may include rules and regulations, enforcement reports.

10.2 Fishing vessels shall not be allowed to operate on the stock under consideration in question without specific authorization.

FAO CCRF (1995) 7.6.2; Others 8.1.2, 8.2.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a mechanism or system established to maintain a record of fishing authorizations.
Current Status/Appropriateness/Effectiveness: This mechanism is effective for maintaining updated records of fishing authorizations and ensuring fishing vessels operate with appropriate authorization.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that fishing vessels are not allowed to operate on thestock under consideration in question without specific authorization. Examples may include various data.

10.3 States involved in the fishery shall, in accordance with international law, and within the framework of fisheries management organizations or arrangements, cooperate to establish systems for monitoring, control, surveillance, and enforcement of applicable measures with respect to fishing operations and related activities in waters outside the States jurisdiction.

FAO CCRF (1995) 8.1.4

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: Not applicable if the fishery does not occur outside the State's EEZ.

Process: There is a mechanism or system established to conduct enforcement operations outside the State's jurisdiction.

Current Status/Appropriateness/Effectiveness: This mechanism is enforcing operations in internationally occurring fisheries. If the *stock under consideration* is not transboundary, shared, straddling, highly migratory or high seas, then the Standard need only be concerned with the effectiveness and suitability of the monitoring, surveillance, control, and enforcement activities at the States level for the fishery of which the unit of certification is a part. If the unit of certification is part of a States fleet fishing on a transboundary, shared, straddling, highly migratory or high seas stock, then it is still likely to be the effectiveness and suitability of the monitoring, surveillance, control, and enforcement activities at the States level that shall be assessed. If the unit of certification covers all the fishing on the *stock under consideration*, then the monitoring, surveillance, control, and enforcement of all of the States fleets is of concern and shall be assessed (to ensure full consideration of total fishing mortality on the *stock under consideration*).

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that States involved in the fishery do, in accordance with international law, and within the framework of fisheries management organizations or arrangements, cooperate to establish systems for monitoring, control, surveillance, and enforcement of applicable measures with respect to fishing operations and related activities in waters outside their States jurisdiction. Examples may include enforcement reports.

10.3.1 Fishery management organizations which are members of or participants in fisheries management organizations or arrangements, shall implement internationally agreed measures adopted in the framework of such organizations or arrangements and consistent with international law to deter the activities of vessels flying the flag of non-members or non-participants engaging in activities that undermine the effectiveness of conservation andmanagementmeasuresestablished by such organizations or arrangements. Inthatrespect, port States shall also proceed, as necessary, toassist other States inachieving theobjectives of the FAO CCRF (1995), and should make known to other States details of regulations and measures they have established for this purpose without discrimination for any vessel of any other State.

FAO CCRF (1995) 7.7.5, 8.3.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lackinginoneparameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each EvaluationParameter has the same numerical value of 3. Meeting<u>all</u> parameters will result in a score of 10 (i.e., full conformance). Not meeting <u>any</u> 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting <u>any</u> 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting <u>any</u> 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: Not applicable if the fishery does not occur outside the State's Exclusive Economic Zone.

Process: There are regulations established against vessels flying the flag of non-member or non-participant States, which may engage in activities that undermine the effectiveness of conservation and management measures established by fisheries management organizations .

Current Status/Appropriateness/Effectiveness: These measures are effective in deterring such practices.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organizations which are members of or participants in fisheries management organizations or arrangements implement internationally agreed measures adopted in the framework of such organizations or arrangements and consistent with international law to deter the activities of vessels flying the flag of non-members or non-participants engaging in activities which undermine the effectiveness of conservation and management measures established by such organizations or arrangements. In that respect, port States also proceed, as necessary, to achieve and to assist other States in achieving the objectives of the FAO CCRF, and make known to other States details of regulations and measures they have established for this purpose without discrimination for any vessel of any other State. Examples may include enforcement or other reports.

10.4 Flag States shallensurethat no fishingvessels areentitled to flytheirflag, fish on thehigh seas or in waters under the jurisdiction of other States, unless such vessels have been issued with a Certificate of Registry and have been authorized to fish by the competent authorities. Such vessels shall carry on board the Certificate of Registry and their authorization to fish.

FAO CCRF (1995) 8.2.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting <u>all</u>parameterswillresult in a score of 10 (i.e., full conformance). Not meeting <u>any</u> 1 evaluation parameter will result in a score of 7 (i.e., minor non-*

conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).

Note: Not applicable if no foreign vessels fishing in the State's EEZ, or if its vessels do not fish in high seas or in another State's EEZ.

Process: There are foreign vessels fishing in State's EEZ. State's EEZ vessels do not fish in high seas or in another State's EEZ.

Current Status/Appropriateness/Effectiveness: These vessels have been issued with a Certificate of Registry and they are required to carry it on board.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the flag State ensures that no fishing vessels are entitled to fly their flag, fish on the high seas or in waters under the jurisdiction of other States, unless such vessels have been issued with a Certificate of Registry and have been authorized to fish by the competent authorities. Such vessels shall carry on board the Certificate of Registry and their authorization to fish. Examples may include various laws, regulations, and other data or reports.

10.4.1 Fishing vessels authorized to fish on the high seas or in waters under the jurisdiction of a State other than the flag State shall be marked in accordance with uniform and internationally recognizable vessel marking systems such as the FAO Standard Specifications and Guidelines for Marking and Identification of Fishing Vessels.

FAO CCRF (1995) 8.2.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: Not applicable if no foreign vessels fish in the State's EEZ or if its vessels do not fish in high seas or in another State's EEZ.

Process: There are foreign vessels fishing in State's EEZ. State's EEZ vessels do not fish in high seas or in another State's EEZ.

Current Status/Appropriateness/Effectiveness: Foreign vessels authorized to fish in the State's EEZ or its vessels fishing in another State's EEZ have been marked accordingly to international guidelines.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that fishing vessels authorized to fish on the high seas or in waters under the jurisdiction of a State other than the flag State, are marked in accordance with uniform and internationally recognizable vessel marking systems such as the FAO Standard Specifications and Guidelines for Marking and Identification of Fishing Vessels. Examples may include various laws, regulations, and other data or reports.

11. There shall be a framework for sanctions for violations and illegal activities of adequate severity to support compliance and discourage violations.

FAO CCRF (1995) 7.7.2, 8.2.7

11.1 States laws of adequate severity shall be in place that provide for effective sanctions.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: The system of States laws is of adequate severity to provide for effective sanctions.

Current Status/Appropriateness/Effectiveness: There is evidence to substantiate that States laws are of adequate severity to provide for effective sanctions. The evidence here includes largely (a) whether laws set out effective penalty provisions and the courts respond in a manner that deters further or repeat offenses, (b) the views of the industry, other stakeholders, and the general public, and (c) the outcomes and associated trends of the enforcement efforts when measured against appropriate performance indicators.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that States laws of adequate severity are in place that provide for effective sanctions. Examples may include various laws, regulations, and other data or reports.

11.2 Sanctions applicable to violations and illegal activities shall be adequate in severity to be effective in securing compliance and discouraging violations wherever they occur. Sanctions shall also be in force to affect authorizationtofishand/or toserveas masters or officers ofafishingvessel in theevent of non-compliance with conservation and management measures.

FAO CCRF (1995) 7.7.2, 8.1.9, 8.2.7

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *EachEvaluationParameter hasthesamenumerical valueof 3. Meeting all parameters willresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: The system of sanctions in place is sufficiently severe to deter violations and illegal activities. The systemshall be considered adequate in severity if the potential sanctions include fines, suspension or withdrawal of permission to fish, and confiscation of catch or equipment.

Current Status/Appropriateness/Effectiveness: There is evidence to substantiate that sanctions for violations of regulations (e.g., suspension, withdrawal, or refusals of fishing permit or of the right to fish) are adequate in severity to secure compliance and discourage violations.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that sanctions applicable in respect of violations and illegal activities areadequate in severity to be effective in securing compliance and discouraging violationswherevertheyoccur. Sanctions arein forcethat affectsauthorizationto fishand/ortoserve asmasters or officersof a fishing vessel, in the event of non-compliance with conservation and management measures. Examples may include various laws, regulations, and other data or reports.

11.3 Fisheriesmanagement organizations shallensurethat sanctionsfor IUUfishingby vesselsand, to thegreatest extent possible, nationals under its jurisdiction are of sufficient severity to effectively prevent, deter, and eliminate IUUfishing and to deprive offenders of the benefits accruing from suchfishing. Thismayinclude the adoption of a civil sanction regime based on an administrative penalty scheme. Fisheries management organizations shall ensure the consistent and transparent application of sanctions.

FAO IUU (2001) 21

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *EachEvaluationParameter hasthesamenumerical valueof 3. Meeting all parameters willresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: The system of sanctions in place are of sufficient severity to effectively prevent, deter, and eliminate IUU fishing and to depriveoffenders ofthebenefitsaccruingfromsuchfishing. Thismayincludetheadoption ofa civilsanctionregimebased on an administrative penalty scheme. The fisheries management organization also ensures the consistent and transparent application of sanctions.

Current Status/Appropriateness/Effectiveness: There is evidence to substantiate that sanctions for violations of regulations are of sufficient severity to effectively prevent, deter, and eliminate IUUfishing and to deprive offenders of the benefits accruing from such fishing. Sanctions are applied transparently and consistently across the board.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fisheries managementorganization ensures that sanctions for IUU fishing by vessels and, to the greatest extent possible, nationals under its jurisdiction are of sufficient severity to effectively prevent, deter, and eliminate IUUfishing and to deprive offenders of the benefits accruing from such fishing. This may include the adoption of a civil sanction regime based on an administrative penalty scheme.Thefisheriesmanagementorganizationalsoensures the consistent and transparentapplication of sanctions.Examples may include various laws, regulations, and other data or reports.

11.4 Flag States shalltakeenforcement measurestowardsfishing vessels entitled to fly their flag, which havebeen found by the State to have contravened applicableconservation and management measures. The State shall, where appropriate, make the contravention of such measures an offense under national legislation.

FAO CCRF (1995) 8.2.7

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: Not applicable if no foreign vessels fish in the State's EEZ or if its vessels do not fish in high seas or in another State's EEZ.

Process: If applicable, the system of enforcement measures is effective for foreign vessels fishing in the State's EEZ or for its vessels fishing in high seas or in another State's EEZ.

Current Status/Appropriateness/Effectiveness: There is evidence to substantiate enforcement action in these cases (i.e., boarding, violations).

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that flag States take enforcement measures with fishing vessels entitled to fly their flag if the vessels have been found by the State to have contravened applicable conservation and management measures. These enforcement measures will include, where appropriate, making the contravention of such measures an offense under national legislation. Examples may include various laws, regulations, and other data or enforcements reports.

D. Serious Impacts of the Fishery on the Ecosystem

12. Considerations of fishery interactions and effects on the ecosystem shall be based on the best scientific evidence available, local knowledge where it can be objectively verified, and a risk assessment-based management approach for determining most probable adverse impacts. Adverse impacts of the fishery on the ecosystem shall be appropriately assessed and effectivelyaddressed.

FAO CCRF (1995) 7.2.3, 8.4.7, 8.4.8, 12.11
FAO Eco (2009) 29.3, 31
FAO Eco (2011) 41-41.4

12.1 Thefishery management organization shall assess the impacts of environmentalfactors on target stocks and associated or dependent species in the same ecosystem, and the relationship among the populations in the ecosystem.

FAO CCRF (1995) 7.2.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *EachEvaluationParameter hasthesamenumerical valueof 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process that allows assessment and monitoring of environmental factors (e.g., climatic, oceanographic) on target and associated species in the same ecosystem, and that assess the relationships between species in the ecosystem.

Current Status/Appropriateness/Effectiveness: There is evidence that assessments have been conducted to determine the impacts of environmental factors on the target and associated or dependent species (to the stock) in the same ecosystems, and on the relationships among these species. The results of these studies are in sufficient detail to allow informed management of the fishery. This requirement is intended to provide information about the current understanding of the overall marine ecosystem structure and relationships among the various species, coupled with environmental monitoring. More information about the effects of the fishery on specific ecosystem components (e.g., associated bycatch and ETPs species interactions, gear-habitat disturbance, ecosystem and food-webs impacts, etc.) are assessed in thefollowing clauses of this section.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization assesses the impacts of environmental factors on target and other species belonging to the same ecosystem or associated with or dependent upon the target species, and the relationship among the populations in the ecosystem. Examples may include various stock and ecosystems assessment reports.

FAO CCRF (1995) 7.2.2
FAO Eco (2009) 29.3, 29.4, 30.4, 31, 31.4
FAO Eco (2011) 41, 41.4

Note: Clause 12.2 is a summary clause and as such does not need to be scored. The 12.2 sub-clauses will instead **provide the specific elements that need to be scored.**
The most probable adverse impacts from human activities, including fishery effects on the ecosystem/environment shall be assessed and, where appropriate, addressed and or/corrected, taking into account available scientific information and local knowledge. This may take the form of an immediate management response or a further analysis of the identified risk. In this context, full consideration should be given to the special circumstances and requirements in developing fisheries, including financial and technical assistance, technology transfer, training, and scientific cooperation. In the absence of specific information on the ecosystem impacts of fishing on the unit of certification, generic evidence based on similar fishery situations can be used for fisheries with low risk of severe adverse impact. However, the greater the risk, the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures.

Clause 12.2 is a non-scoring clause so there are no EP's associated with it.

12.2 The most probable adverse impacts from human activities, including fishery effects on the ecosystem/environment, shall be assessed and, where appropriate, addressed and or/corrected, taking into account available scientific information and local knowledge. This may take the form of an immediate management response or a further analysis of the identified risk. In this context, full consideration should be given to the special circumstances and requirements in developing fisheries, including financial and technical assistance, technology transfer, training, and scientific cooperation. In the absence of specific information on the ecosystem impacts of fishing on the unit of certification, generic evidence based on similar fishery situations can be used for fisheries with low risk of severe adverse impact. However, the greater the risk, the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures.

FAO CCRF (1995) 7.2.2
FAO Eco (2009) 29.3, 29.4, 30.4, 31, 31.4
FAO Eco (2011) 41, 41.4

12.2.1 The fishery management organization shall consider the most probable adverse impacts of the unit of certification on main associated species (Appendix 1, Part 3 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) shall be monitored and shall not threaten these non-target species with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible. If such impacts arise, effective remedial action shall be taken.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process that accounts for the most probable adverse impacts of the unit of certification on main associated species. This may take the form of an immediate management response or a further analysis of the identified risk. In the absence of specific information on such impacts of fishing for the unit of certification, generic evidence based on similar fishery situations can be used for fisheries with low risk of severe adverse impact. However, the greater the risk, the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures. If information has been utilized from generic evidence based on similar fishery situations, then, based on the risk of severe adverse impact, the information shall be of higher precision for higher risk. For example, any of the following elements can be considered high risk for a fishery: keystone species, species with

relative low growth rates or high catchability, fisheries with significant ETP or bycatch of non-target fishery resources (or non-target stocks, species, harvests, or discards), or fisheries with important concerns for gear–habitat interactions. If information specific to the unit of certification area is available, generic evidence based on similar fishery situations may not be necessary.

Current Status/Appropriateness/Effectiveness: There is evidence that the fishery management organization considers the most probable adverse impacts of the fishery under assessment on main associated species (e.g. recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are monitored and do not threaten these non-target species with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible. If such impacts arise, effective remedial action is taken. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization considers the most probable adverse impacts of the unit of certification on main associated species, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are monitored and do not threaten these non-target species with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible. If such impacts arise, effective remedial action is taken. Examples may include various stock and ecosystems assessment reports.

12.2.2 The fishery management organization shall consider the most probable adverse impacts of the unit of certification on minor associated species (Appendix 1, Part 3 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) shall be monitored and shall not threaten these non-target species with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible. If such impacts arise, effective remedial action shall be taken.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process that accounts for the most probable adverse impacts of the unit of certification on minor associated species. This may take the form of an immediate management response or a further analysis of the identified risk. In the absence of specific information on such impacts of fishing for the unit of certification, generic evidence based on similar fishery situations can be used for fisheries with low risk of severe adverse impact. However, the greater the risk the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures. If information has been utilized from generic evidence based on similar fishery situations (proxies), then, based on the risk of severe adverse impact, the information shall be of higher precision for higher risk. For example, any of the following elements can be considered high risk for a fishery: keystone species, species with relative low growth rates or high catchability, fisheries with significant ETP or bycatch of non-target fishery resources (or non-target stocks, species, harvests, or discards), or fisheries with important concerns for gear–habitat interactions. If information specific to the unit of certification area is available, generic evidence based on similar fishery situations may not be necessary.

Current Status/Appropriateness/Effectiveness: There is evidence that the fishery management organization considers the most probable adverse impacts of the fishery under assessment on minor associated species, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are monitored and do not threaten these non-target species with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible. If such impacts arise, effective remedial action is taken. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization considers the most probable adverse impacts of the unit of certification on minor associated species,

by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and localknowledge. Accordingly,thesecatches(including discards) aremonitored and do notthreatenthese non-targetstocks with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible. If such impacts arise, effective remedial action is taken. Examples may include various stock and ecosystems assessment reports.

12.2.3 There shall be outcomeindicator(s) consistent with achieving management objectives for non-target species (i.e., avoiding overfishing and other impacts that are likely to be irreversible or very slowly reversible).

FAO Eco (2011) 41.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Notmeeting any 1 evaluationparameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process to set outcome indicator(s) consistent with achieving management objectives for non-target species (i.e., avoiding overfishing and other impacts that are likely to be irreversible or very slowly reversible).

Current Status/Appropriateness/Effectiveness: There is evidence that outcome indicator(s) consistent with achieving management objectives for non-target species (i.e., avoiding overfishing and other impacts that are likely to be irreversible or very slowly reversible) have been achieved. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are effective outcome indicator(s) consistent with achieving management objectives for non-target species (i.e., avoiding overfishing and other impacts that are likely to be irreversible or very slowly reversible). Examples may include fishery management reports, and stock or ecosystems assessment reports.

12.2.4 The fishery management organization shall consider the most probable adverse impacts of the unit of certification on ETP species(Appendix 1, Part 4 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in ascore of 10(i.e., fullconformance). Not meeting any 1 evaluationparameter will result in ascore of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process that accounts for the most probable adverse impacts of the unit of certification on ETP species. This maytaketheform of an immediatemanagementresponse ora furtheranalysis oftheidentifiedrisk. Intheabsenceof specific information on such impacts of fishing for the unit of certification, generic evidence based on similar fishery situations (proxies) can be used for fisheries with low risk of severe adverse impact. However, the greater the risk the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures. If information has been utilized from generic evidence based on similar fishery situations, based on the risk of severe adverse impact, the information shall be of higher precision for higher risk. For example, any of the following elements can be considered high risk for a fishery: keystone

species, species with relative low growth rates or high catchability, fisheries with significant ETP or bycatch of non-target fishery resources (or non-target stocks, species, harvests, or discards), or fisheries with important concerns for gear–habitat interactions. If information specific to the unit of certification area is available, generic evidence based on similar fishery situations may not be necessary.

Current Status/Appropriateness/Effectiveness: There is evidence that the fishery management organization considers the most probable adverse impacts of the fishery under assessment on ETP species (e.g. negatively impacting rebuilding efforts), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these impacts are monitored and do not impede, slow, or reduce likelihood of recovery of the species to target levels (or other planned outcomes). If such impacts arise, effective remedial actions are taken.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization considers the most probable adverse impacts of the fishery under assessment on ETP species, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are monitored and do not threaten these non-target stocks with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible; if such impacts arise, effective remedial action are taken. Examples may include various stock and ecosystems assessment reports.

12.2.5 There shall be outcome indicator(s) consistent with achieving management objectives seeking to ensure that ETP species are protected from adverse impacts resulting from interactions with the unit of certification and any associated enhanced fishery activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible.

FAO Eco (2011) 41

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process in place that allowing creation of effective outcome indicators seeking to ensure that ETP species are protected from adverse impacts resulting from interactions with the unit of certification and any associated enhanced fishery activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible.

Current Status/Appropriateness/Effectiveness: There is evidence for established outcome indicators (e.g., in a fishery management plan or other regulation) seeking to ensure that ETP species are protected (through States or international regulations) from adverse impacts resulting from interactions with the unit of certification and any associated enhanced fishery activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored. Overall, fishing activity does not impede, slow, or reduce likelihood of recovery of the species to target levels or other planned outcomes. Management objectives shall be achieved accordingly. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are effective outcome indicators seeking to ensure that ETP species are protected from adverse impacts resulting from interactions with the unit of certification and any associated enhanced fishery activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible. Examples may include fishery management plans, or stock and ecosystems assessment reports.

12.2.6 The fishery management organization shall consider the most probable adverse impacts of the unit of certification on habitats (Appendix 1, Part 5 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process that accounts for the most probable adverse impacts of the unit of certification on habitats. This may take the form of an immediate management response or a further analysis of the identified risk. In the absence of specific information on such impacts of fishing for the unit of certification, generic evidence based on similar fishery situations can be used for fisheries with low risk of severe adverse impact. However, the greater the risk the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures. If information has been utilized from generic evidence based on similar fishery situations, based on the risk of severe adverse impact, the information shall be of higher precision for higher risk. For example, any of the following elements can be considered high risk for a fishery: keystone species, species with relative low growth rates or high catchability, fisheries with significant ETP species or bycatch of non-target fishery resources (or non-target stocks, species, harvests, or discards), or fisheries with important concerns for gear–habitat interactions. If information specific to the unit of certification area is available, generic evidence based on similar fishery situations may not be necessary.

Current Status/Appropriateness/Effectiveness: There is evidence that the fishery management organization considers the most probable adverse impacts of the unit of certification on habitats, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, if these impacts are likely to be irreversible or very slowly reversible, effective remedial action is taken (please see Appendix 1 part 5, noting specifically the 3 habitat assessment elements, and part 7 for cumulative effects evaluation). Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization considers the most probable adverse impacts of the unit of certification on habitats, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are monitored and do not threaten these non-target species with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible; if such impacts arise, effective remedial action is taken. Examples may include various stock and ecosystems assessment reports.

12.2.7 There shall be knowledge of the essential habitats for the *stock under consideration* and potential fishery impacts on them. Impacts on essential habitats, and on habitats that are highly vulnerable to damage by the fishing gear involved, shall be avoided, minimized, or mitigated. In assessing fishery impacts, the full spatial range of the relevant habitat shall be considered, not just the part of the spatial range that is potentially affected by fishing.

FAO Eco (2009) 31.3
FAO Eco (2011) 41.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-*

conformance). Not meeting <u>any</u> 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting <u>any</u> 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).

Process: There is a mechanism in place by which the potential impacts of the fishery upon habitats essential to the *stock under consideration* and on habitats that are highly vulnerable to damage are identified. This or a similar mechanism shall also be in place to identify habitats that are highly vulnerable to fishery activities by the unit of certification. The information provided by these mechanisms shall be used to produce specific management objectives related to avoiding significant adverse impacts on habitats. The knowledge of the habitats in question can therefore include relevant traditional, fisher, or community knowledge, provided its validity can be objectively verified (i.e., the knowledge has been collected and analyzed though a systematic, objective, and well-designed process, and is not just hearsay). When identifying highly vulnerable habitats, their value to ETP species shall be considered, with habitats essential to ETP species being categorized accordingly.

Current Status/Appropriateness/Effectiveness: Successful management measures have been developed and are in place to achieve the objectives described in the process parameter.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there is knowledge of the essential habitats for the *stock under consideration* and potential fishery impacts on them. Impacts on essential habitats and on habitats that are highly vulnerable to damage by the fishing gear involved are avoided, minimized, or mitigated. In assessing fishery impacts, the full spatial range of the relevant habitat is considered, not just the part of the spatial range that is potentially affected by fishing. Examples may include various regulations, data, and reports.

12.2.8 There shall be outcome indicator(s) consistent with achieving management objectives for avoiding, minimizing, or mitigating the impacts of the unit of certification on essential habitats for the *stock under consideration* and on habitats that are highly vulnerable to damage by the fishing gear of the unit of certification.

FAO Eco (2011) 41.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a mechanism in place that allows the establishment of outcome indicator(s) consistent with achieving management objectives for avoiding, minimizing, or mitigating impacts on essential habitats for the *stock under consideration* and on habitats that are highly vulnerable to damage by the fishing gear of the unit of certification.

Current Status/Appropriateness/Effectiveness: Successful outcome indicators and management measures have been developed and are in place to achieve the objectives described in the process parameter.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are effective outcome indicator(s) consistent with achieving management objectives for avoiding, minimizing, or mitigating impacts on essential habitats for the *stock under consideration* and on habitats that are highly vulnerable to damage by the fishing gear of the unit of certification. Examples may include various regulations, data, and reports.

12.2.9 The fishery management organization shall consider the most probable adverse impacts of the fishery under assessment on the ecosystem (Appendix 1, Part 6), by assessing and, where appropriate, addressing and or/correcting them, taking into account available scientific information and local knowledge.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process that accounts for the most probable adverse impacts of the unit of certification on the ecosystem. This may take the form of an immediate management response or a further analysis of the identified risk. In the absence of specific information on the ecosystem impacts of fishing for the unit of certification, generic evidence based on similar fishery situations (proxies) can be used for fisheries with low risk of severe adverse impact. However, the greater the risk the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures. If information has been utilized from generic evidence based on similar fishery situations, then, based on the risk of severe adverse impact, the information shall be of higher precision for higher risk. For example, any of the following elements can be considered high risk for a fishery: keystone species, species with relative low growth rates or high catchability, fisheries with significant ETP species or bycatch of non-target fishery resources (or non-target stocks, species, harvests, or discards), or fisheries with important concerns for gear–habitat interactions. If information specific to the unit of certification area is available, generic evidence based on similar fishery situations may not be necessary.

Current Status/Appropriateness/Effectiveness: There is evidence that the fishery management organization considers the most probable adverse impacts of the fishery under assessment on the ecosystem (e.g. food-webs effects), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these impacts are likely to be irreversible or very slowly reversible; or effective remedial action shall be taken. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored. There are policies in place (e.g., harvest control rules) that are effective at protecting ecosystem functioning and accounting for species' ecological role, and precautionary and effective spatial management is used (e.g., to protect spawning areas, prevent localized depletion, and protect important foraging areas for predators of fished species) if applicable.

Current Status/Appropriateness/Effectiveness: The bait used to capture the *stock under consideration* shall not be formally classified as ETP species (by a State or other international designations), and the fishery under consideration does not hinder recovery or rebuilding of overfished species that are not formally classified as ETP species and used as bait.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization considers the most probable adverse impacts of the unit of certification on the ecosystem, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are monitored and do not threaten these non-target stocks with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible; if such impacts arise, effective remedial action is taken. Examples may include various stock and ecosystems assessment reports.

12.2.10 There shall be outcome indicator(s) consistent with achieving management objectives seeking to minimize adverse impacts of the unit of certification (including any fishery enhanced activities) on the structure, processes, and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible. Any modifications to the habitat for enhancing the stock under consideration must be reversible and not cause serious or irreversible harm to the natural ecosystem's structure, processes, and function.

FAO Eco (2011) 36.9, 41

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
	Lacking in two parameters	**Lacking in one parameter**	**Fulfills all parameters**

Lacking in three or more parameters			

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process to allow for drafting effective outcome indicator(s) consistent with achieving management objectives seeking to minimize adverse impacts of the unit of certification (including any fishery enhancement activities) on the structure, processes, and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible. There is also a process that states modifications to the habitat for enhancing the *stock under consideration* are reversible and do not cause serious or irreversible harm to the natural ecosystem's structure, processes, and function.

Current Status/Appropriateness/Effectiveness: There is evidence for outcome indicator(s) consistent with achieving management objectives seeking to minimize adverse impacts of the unit of certification (including any fishery enhancement activities) on the structure, processes, and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible. Any modifications to the habitat for enhancing the *stock under consideration* are reversible and do not cause serious or irreversible harm to the natural ecosystem's structure, processes, and function. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are effective outcome indicator(s) consistent with achieving management objectives seeking to minimize adverse impacts of the unit of certification (including any fishery enhancement activities) on the structure, processes, and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible. Any modifications to the habitat for enhancing the *stock under consideration* are reversible and do not cause serious or irreversible harm to the natural ecosystem's structure, processes, and function. Examples may include various regulations, data, and reports.

12.2.11 The fishery management organization shall consider the most probable adverse human impacts on the stock/ecosystem under consideration, by assessing and, where appropriate, addressing and or/correcting them, taking into account available scientific information and local knowledge.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process that accounts for the most probable adverse impacts of the unit of certification on the ecosystem. This may take the form of an immediate management response or a further analysis of the identified risk. In the absence of specific information on the ecosystem impacts of fishing for the unit of certification, generic evidence based on similar fishery situations (proxies) can be used for fisheries with low risk of severe adverse impact. However, the greater the risk the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures.

Current Status/Appropriateness/Effectiveness: There is evidence that the fishery management organization considers the most probable adverse human impacts of the unit of certification on the ecosystem, by assessing and, where appropriate, addressing and or/correcting them, taking into account available scientific information and local knowledge. Accordingly, these impacts are likely to be irreversible or very slowly reversible; if so, effective remedial actions shall be taken. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization considers the most probable adverse impacts of the unit of certification on the ecosystem, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are monitored and do not threaten these non-target stocks with serious risk of

extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible; if such impacts arise, effective remedial action is taken. Examples may include various stock and ecosystems assessment reports.

12.3 The role of the *stock under consideration* in the food web shall be considered, and if it is a key prey species[2] in the ecosystem, management objectives and measures shall be in place to avoid severe adverse impacts on dependent predators.

FAO Eco (2009) 31.2
FAO Eco (2011) 41.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a mechanism in place by which the role of the *stock under consideration* in the food web is assessed and monitored, and its relative importance as a prey species is determined. If the species is considered by the fisheries management organization to be an important prey species, there shall be specific management objectives relating to minimizing the impacts of the fishery on dependent predators. The FAO Guidelines require that all sources of fishing mortality on the *stock under consideration* are taken into account (whether or not it is a prey species) in assessing the state of the *stock under consideration*, including discards, unobserved mortality, incidental mortality, unreported catches, and catches in other fisheries.

Current Status/Appropriateness/Effectiveness: Management measures have been developed and are in place to achieve the management objectives described in the process parameter, and there is evidence to demonstrate that they are successful to this end. If the species under assessment is not considered to be a key prey species, then this parameter shall be considered fulfilled.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the role of the *stock under consideration* in the food web is considered, and if it is a key prey species in the ecosystem, objectives and management measures are in place to avoid severe adverse impacts on dependent predators. Examples may include various stock and ecosystem assessment reports.

[2] See Appendix 1 page 150

12.4 Thereshallbe outcomeindicator(s) consistent withachievingmanagementobjectives seekingtoavoidsevere adverse impacts on dependent predators resulting from the unit of certification fishing on a *stock under consideration* that is a key prey species[3].

FAO Eco (2011) 41.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *EachEvaluationParameter hasthesamenumerical valueof 3. Meeting all parameters willresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a mechanism in place that allows the establishment of outcome indicator(s) consistent with achieving management objectives seeking to avoid severe adverse impacts on dependent predators resulting from the unit of certification fishing on a *stock under consideration* that is a keyprey species[4]. Mortality is usually accounted for all removals of given species. The state and federal fish accounting systems operate in depth and make an explicit effort to document all removals to confirm with regulations in force. The assessors shall ensure that all removals are accounted for in the system (fish ticket, eLandings) for stock assessment and management purposes.

Current Status/Appropriateness/Effectiveness: There is evidence that outcome indicators and management measures have been developed, are in place, and have succeeded in achieving the objectives described in the process parameter.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are effective outcome indicator(s) consistent with achieving management objectives seeking to avoid severe adverse impacts on dependent predators resulting from the unit of certification fishing on a *stock under consideration* that is a key prey species. Examples may include various stock and ecosystems assessment reports.

[3] [3] See Appendix 1 page 150

[4] General harvest guidelines based on Lenfest report: " in fisheries with an intermediate level of information (which will include most well-managed forage fisheries), there must be at least 40% of virgin or unfished biomass (B0) left in the water, and fishing mortality should be no higher than 50% of FMSY. Low information fisheries should leave at least 80% of B0 in the water. High information fisheries (which have a high information not just on the fishedstock, but the full ecosystem), may exceed these reference points if justified by thescience, but in no case should fishing mortality exceed 75% of FMSY or biomass fall below 30% of B0.

Link: http://www.lenfestocean.org/~/media/legacy/lenfest/pdfs/littlefishbigimpact_revised_12june12.pdf?la=en

12.5 States shall introduce and enforce laws and regulations based on the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).

FAO CCRF (1995) 8.7.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: The appropriate regulations have been implemented.

Current Status/Appropriateness/Effectiveness: These regulations and their enforcement are effective and in line with the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the State has introduced and enforces laws and regulations based on the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78). Examples may include various regulations, data, and reports.

12.6 Research shall be promoted on the environmental and social impacts of fishing gear especially on the impact of such gear on biodiversity and coastal fishing communities.

FAO CCRF (1995) 8.4.8, 7.6.4

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: Research is promoted on the environmental and social impacts of fishing gear and its impacts on biodiversity and coastal fishing communities, as applicable to the fishery.

Current Status/Appropriateness/Effectiveness: There is evidence for this research, and is it considered appropriate for overall fisheries management purposes.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that research is promoted on the environmental and social impacts of fishing gear especially the impact of such gear on biodiversity and coastal fishing communities. Examples may include various regulations, data, and reports.

12.7 Thefisherymanagement organization shallmakeuse, whereappropriate, of Marine Protected Areas(MPAs). The general objectives for establishing MPAs shall include ensuringsustainability of fish stocks and fisheries, and protecting marine biodiversity and critical habitats.

FAO FM/MPA (2011) 1.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lackingin oneparameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting allparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process available for the consideration of MPAs as appropriate, as a tool for management.

Current Status/Appropriateness/Effectiveness: There shall be evidence for the use of MPAs, if appropriate (e.g. if they are employed MPAs as part of suite of management tools), as a tool for effective management with the general objectives of ensuring sustainability of fish stocks and fisheries, and protecting marine biodiversity and critical habitats.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization has made use, where appropriate, of MPAs. The objectives of establishing MPAs are ensuring sustainability of fish stocks and fisheries, and protecting marine biodiversity and critical habitats. Examples may include various regulations, data, and reports.

Might insert a note to see appendix. Look for MPA

13. Wherefisheriesenhancementisutilized, environmental assessmentandmonitoring shall consider genetic diversity and ecosystem integrity.

FAO CCRF (1995) 9.1.2, 9.1.3, 9.1.4, 9.1.5, 9.3.1, 9.3.5
FAO Eco (2011) 36.9, 38, 39, 40, 41, 43

Section 13 of the Standard is only applicable when the fishery under assessment utilizes fisheries enhancement techniques.

13.1 Thefishery management organization shall promote responsible development and management of fisheries enhancement, including an advanced evaluation of the effects of fisheries enhancement on genetic diversity and ecosystem integrity, based on the best scientific evidence available and/or verifiable and objective traditional, fisher, or community knowledge. Significant uncertainty is to be expected in assessing possible adverse ecosystem impacts of fisheries, including culture and enhancement activities. This issue can be addressed by taking a risk assessment/risk management approach.

FAO CCRF (1995) 9.1.2
FAO Eco (2011) 41

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lackingin oneparameter**	**Fulfills all parameters**

Note. The Assessment Team (AT) shall review regulations, statutes, policies and planning documents of the organization(s) that oversee fisheries enhancement projects to determine if current and best scientific evidence available is incorporated with respect to ensuring that adverse impacts are minimal. Risk assessment and risk management may be expressed as a systematic review of possible adverse impacts.

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting allparameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a highlevel of evaluation (conducive to properplanning of fisheries enhancement activities),based on the best scientific evidence available , of the effects of fisheries enhancement on genetic diversity and ecosystem integrity.

Current Status/Appropriateness/Effectiveness: The overall fishery enhancement planning activities, policy/ies and management plans are considered appropriate for structuring the efforts to maintain genetic diversity and ecosystem integrity. Evaluation of the ecosystem shall be understood as it relates to the fishery enhancement activity occurring in the unit of certificationarea.Significantuncertainty isto be expectedin assessing possibleadverseecosystemimpacts offisheries, including fishery enhancement activities. This issuecan be addressed bytaking arisk assessment/risk management approach.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery managementorganizationpromotesresponsibledevelopmentand managementof fisheryenhancement,including anadvanced evaluation of the effects of fishery enhancement on genetic diversity and ecosystem integrity, based on the best scientific evidence available . Examples may include various regulations, data, and assessment reports.

13.1.1 In the case of enhanced fisheries, the fishery management organization should take into account natural production , and shall take appropriate actions for conserving genetic diversity and biodiversity, protecting ETP species, maintaining aquatic ecosystems, minimizing adverse impacts on ecosystem structure and function, controlling disease, and maintaining the quality of enhanced stock. Enhanced fisheries may be supported in part by stocking organisms produced in aquaculture facilities or removed from wild stocks other than the *stock under consideration*. Aquaculture production for stocking purposes shall be managed and developed according to the above provisions.

FAO CCRF (1995) 9.3.1
FAO Eco (2011) 36.8, 36.9, 40, 41

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Note. The AT shall review pertinent documents and publications to ensure that potential adverse impacts resulting from enhancement have been considered and procedures implemented to effectively minimize them.

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There are processes through which the management system can develop enhanced fisheries supported in part by stocking organisms produced in enhancement facilities or removed from wild stocks other than the *stock under consideration*. The management system takes due regard of the natural production , conserving genetic diversity and biodiversity, protecting endangered species, maintaining the integrity of aquatic ecosystems, minimizing adverse impacts on ecosystem structure and function, controlling disease, and maintaining the quality of enhanced material. As appropriate, there are also management objectives and measures consistent with avoiding significant negative impacts of enhancement activities on the natural reproductive component of the *stock under consideration* and any on other wild stocks from which the organisms for stocking are being removed.

Current Status/Appropriateness/Effectiveness: These measures are considered effective in terms of reflecting the key overarching management objectives and ensuring that appropriate measures are implemented dealing with the effects and ecological dynamics of enhanced and wild stock interactions, to ensure genetic diversity of wild stocks is maintained. There is evidence that enhancement practices take into account the natural production (wild and enhanced stocks), and take appropriate actions for conserving genetic diversity and biodiversity, protecting ETP species, maintaining the integrity of aquatic ecosystems, minimizing adverse impacts on ecosystem structure and function, controlling disease, and maintaining the quality of enhanced material. The ecological and genetic interactions and effects between wild and enhanced stock and the potential deleterious effects arising from this shall be analyzed and assessed here. Accordingly, the individual provisions mentioned above shall be assessed for significant negative effects. Enhanced stocks shall not have a significant negative effect (i.e., genetic, ecological, physical displacement, resource competition) on wild fish stocks.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the case of enhanced fisheries, the fishery management organization takes into account the natural production, and takes appropriate actions for conserving genetic diversity and biodiversity, protecting ETP species, maintaining the integrity of aquatic ecosystems, minimizing adverse impacts on ecosystem structure and function, controlling disease, and maintaining the quality of stocking material.

Enhanced fisheries may be supported in part by stocking organisms produced in enhancement facilities or removed from wild stocks other than the *stock under consideration*. Enhanced production for stocking purposes is managed and developed according to the above provisions. Examples may include various regulations, data, and reports.

13.2 The fishery management organization shall produce and regularly update fishery enhancement development strategies and plans, as required, to ensure that fishery enhancement development is ecologically sustainable and to allow the rational use of resources shared by enhancement and other activities.

FAO CCRF (1995) 9.1.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Note. The AT shall ensure that the findings from 13.1 are updated on a continuous basis to ensure that the principles in 13.1.1 are effectively minimized.

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There are defined strategies and plans for enhancement development in accordance with ecological sustainability and rational use of resources shared by enhancement and other activities.

Current Status/Appropriateness/Effectiveness: If studies have concluded that enhancement developments are ecologically sustainable in the interested unit of certification area, the enhancement developments allow the rational sharing of resources with other activities.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization produces and regularly updates fishery enhancement development strategies and plans, as required, to ensure that enhancement development is ecologically sustainable and to allow the rational use of resources shared by enhancement and other activities. Examples may include various regulations, data, and assessment reports.

13.2.1 Thefisherymanagement organization shall ensure that the livelihoods of local communities, and their access to fishing grounds, are not negatively affected by enhanced fisheries developments.

FAO CCRF (1995) 9.1.4

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lackingin oneparameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has thesamenumericalvalue of 3. Meeting all parameterswillresult in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a mechanism in place by which the impacts of enhanced fisheries developments on local communities and access to fishing grounds are predicted and monitored. The outputs of this mechanism are used to define management objectives related to minimizing the negative impacts of enhanced fisheries developments.

Current Status/Appropriateness/Effectiveness: Measures, regulations, and policies have been designed, are in place, and have succeeded in achieving the objectives described in the process parameter. The focus is to ensure that the livelihoods of local communities, and their access to fishing grounds, are not negatively affected (e.g. geographical displacement) by enhanced fisheries developments. There may be circumstances where economic tradeoffs may be required to improve overall community benefit.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization ensures that the livelihoods of local communities, and their access to fishing grounds, are positively affected by enhanced fisheries developments. Examples may include various regulations, data, and assessment reports.

13.3 Effective procedures specific to fisheries enhancement activities shall be established to undertake appropriate environmental assessment and monitor (with the aim of minimizing) adverse ecological changes caused by inputs (e.g., pollution, disease) and their related economic and social consequences.

FAO CCRF (1995) 9.1.5, 9.2.5

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a mechanism in place by which the potential environmental impacts of fisheries enhancement are predicted and monitored. This mechanism shall be used to develop management objectives related to the minimization of adverse ecological changes.

Current Status/Appropriateness/Effectiveness: Management measures and regulations have been designed, are in place, and have succeeded in achieving the management objectives described in the process parameter.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that effective procedures specific of fisheries enhancement are established to undertake appropriate environmental assessment and monitoring with the aim of minimizing adverse ecological changes such as those caused by inputs (e.g., pollution, disease) from enhancement activities and their related economic and social consequences. Examples may include various regulations, data, and assessment reports.

13.4 With due regard to the assessment approach employed, stock assessment of enhanced fisheries shall consider the separate contributions from enhanced and natural production.

FAO Eco (2011) 43

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: As appropriate, there is a mechanism for stock assessment of enhanced fisheries that considers the separate contributions from aquaculture and natural production.

Current Status/Appropriateness/Effectiveness: There is evidence that stock assessment of enhanced fisheries considers the separate contributions from enhanced and natural production.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that with due regard to the assessment approach employed, stock assessment of enhanced fisheries considers the separate contributions from enhancement and natural production. Examples may include various regulations, data, and assessment reports.

13.5 Regarding the enhanced components of the *stock under consideration*, when a natural reproductive stock component is maintained and fishery production is based primarily on natural biological production within the ecosystem of which the *stock under consideration* forms a part, enhanced fisheries shall meet the following criteria: (1) the species shall be native to the fishery's geographic area or introduced historically and have subsequently become established as part of the natural ecosystem, (2) there shall be natural reproductive components of the *stock under consideration*, and (3) the growth during the post-release phase shall be based upon food supply from the natural environment and the production system shall operate without supplemental feeding.

FAO Eco (2011) 38

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process in place by which enhanced fisheries are managed, and which includes consideration of the origin of enhanced species, the maintenance of naturally reproducing components, and the food supply during the post-release phase. The intent of this clause does not refer to net pen rearing after fish are removed from enhancement facilities, but to the time when fish are released in the wild for their ocean migration. Note that in Alaska the first principal of enhancing fisheries through hatchery production is that the fitness and productivity of wild stocks should be maintained. An important method to accomplish this is to direct separate fisheries onto wild stocks and hatchery stocks. It may occur that the fishery on enhanced stocks is larger and that the aggregate fishery predominately catches enhanced stocks, in which case the aggregate fishery is *based primarily on enhanced production* but it is not at variance with the first principal.

Current Status/Appropriateness/Effectiveness: There is evidence to demonstrate that the species in the *stock under consideration* is native to the fishery's geographic area, or was introduced historically and has subsequently become established as part of the natural ecosystem.

Current Status/Appropriateness/Effectiveness: There is evidence to demonstrate that there is a naturally reproductive component of the *stock under consideration*.

Current Status/Appropriateness/Effectiveness: There is evidence to demonstrate that the growth of the stocked component during the post-release phase is based upon food supply from the natural environment and the production system operates without supplemental feeding.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that regarding the enhanced components of the *stock under consideration*, provided that a natural reproductive stock component is maintained and fishery production is based primarily on natural biological production within the ecosystem of which the *stock under consideration* forms a part, enhanced fisheries meet the following criteria: (1) the species is native to the fishery's geographic area or introduced historically and has subsequently become established as part of the natural ecosystem, 2) there are natural reproductive components of the *stock under consideration*, and (3) the growth during the post-release phase is based upon food supply from the natural environment and the production system operates without supplemental feeding. Examples may include various regulations, data, and reports.

13.6 In the case of enhanced fisheries, the *stock under consideration* may comprise naturally reproductive components and components maintained by released from an enhancement facility. To avoid significant negative impacts of fishery enhancement activities on the natural reproductive components of the *stock under consideration*, the following shall apply: (1) naturally reproductive components of enhanced stocks shall not be overfished, and (2) naturally reproductive components of the stock under consideration shall not be displaced by enhanced components, and (3) in particular, displacement shall not result in a reduction of the stock under consideration below abundance-based target reference points (or their proxies) defined for the regulation ofharvest.

FAO Eco (2011) 39

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**
Evaluation Parameters ***Score Calculation Procedure:*** *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*			
Process: There is a process in place to manage the naturally reproductive and enhanced components of the *stock under consideration*, to avoid significant negative impacts of enhancement activities on the naturally reproductive components (e.g., overfishing or displacement). **Current Status/Appropriateness/Effectiveness**: There is evidence to demonstrate that the naturally reproductive components of stock under consideration are not overfished[5]. **Current Status/Appropriateness/Effectiveness**: There is evidence to support that the naturally reproductive components of stock under consideration are not displaced (i.e. spatially and geographically) by enhanced components (and in particular, do not result in a reduction of the natural reproductive component of the stock under consideration below abundance-based target reference points or their proxies as defined for the regulation of harvest (e.g., escapement goals). **Evidence Basis:** The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the case of enhanced fisheries, the *stock under consideration* may comprise naturally reproductive and enhanced components. In the context of avoiding significant negative impacts of enhancement activities on the natural reproductive components of *stock under consideration*, the following apply: (1) naturally reproductive components of the stock under consideration are not overfished, (2) naturally reproductive components of the stock under consideration are not substantially displaced by enhanced components, and (3) in particular, displacement does not result in a reduction of the natural reproductive component of the stock under consideration below abundance-based target reference points (or their proxies) defined for the regulation of harvest. Examples may include various regulations, data, and reports.			

13.7 Any modification to the habitat for enhancing the *stock under consideration* is reversible and does not cause serious or irreversible harm to the natural ecosystem's structure and function.

FAO Eco (2011) 41

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**
Evaluation Parameters			

[5] See overfishing definition for salmon page 134-136 of Appendix 1.

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a system that allows for the prevention or reversing of habitat modifications that may cause serious or irreversible harm to the natural ecosystem's structure and function.

Current Status/Appropriateness/Effectiveness: There is evidence that are none, or minimal habitat modifications and that these modifications to the habitat for enhancing the *stock under consideration* are reversible and cause none to insignificant harm to the natural ecosystem's structure and function. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that modifications to the habitat for enhancing the *stock under consideration* are reversible and do not cause serious or irreversible harm to the natural ecosystem's structure and function. Examples may include various regulations, data, and assessment reports.

13.7.1 Efforts shall be undertaken to minimize the adverse impacts of introducing non-native species or genetically altered stocks used for aquaculture into waters.

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process to manage introduction of non-native species or genetically altered stocks used for aquaculture, . Please note that In Alaska non on-native species are permitted to enter into the state for any purpose, especially not for use in fish culture.

Current Status/Appropriateness/Effectiveness: Efforts are made to minimize recognized harmful issues or effects, and these efforts are considered effective. In terms of effective efforts to minimize the potential adverse impacts of genetically altered stocks on wild stocks, the assessment team shall ensure evaluation of the overall enhancement system including policies, plans, objectives, measures, and management practices.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that efforts are undertaken to minimize the harmful effects of introducing non-native species or genetically altered stocks used for aquaculture (including culture-based fisheries). Examples may include various regulations, data, and reports.

13.7.2 Steps shall be taken to minimize adverse genetic, disease, and other effects of escaped farmed fish (aquaculture) on wildstocks.

FAO CCRF (1995) 9.3.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a process capable to deal with adverse genetic effects, disease, and other adverse impacts of farmed fish on wild stocks. Please note this clause addresses farmed fish originating from outside Alaska (e.g., Canada or Russia) and its potential effects on Alaska wild stocks.

Current Status/Appropriateness/Effectiveness: The management measures in place are effective in minimizing adverse genetic effects, disease, and other adverse impacts of escaped farmed fish on wild stocks.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that steps are taken to minimize adverse genetic effects, disease, and other adverse impacts of escaped farmed fish on wild stocks. Examples may include various regulations, data, and reports.

13.7.3 Research shall be promoted to develop enhancement techniques for endangered species to protect, rehabilitate, and increase their stocks, taking into account the critical need to conserve their genetic diversity.

FAO CCRF (1995) 9.3.5

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Note. The AT should ensure that if a local stock is designated as "stock of concern" and if enhancement techniques are identified as a means of rehabilitation that the program ensure genetic diversity of the stock.

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: Not applicable if fishery enhancement activities are not geared towards ETP species rehabilitation.

Process: There is a process in place to recognize if the fishery in question is composed of one or ETP species in need of rehabilitation.

Current Status/Appropriateness/Effectiveness: Research into rehabilitation techniques for ETP species and the conservation of genetic diversity is being promoted. The research has taken into account the critical need to conserve genetic diversity of ETP species.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that research is promoted to develop enhancement techniques for ETP species to protect, rehabilitate, and increase their stocks, taking into account the critical need to conserve genetic diversity of ETP species. Examples may include various regulations, data, and reports.

13.8 The fishery management organization shall protect transboundary aquatic ecosystems by supporting responsible enhanced fishery practices within the States jurisdiction and cooperating to promote sustainable enhanced fishery practices.

FAO CCRF (1995) 9.2.1

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: Management measures are in place to support sustainable enhanced fishery practices and these are in accord with international practices.

Current Status/Appropriateness/Effectiveness: These measures are effective in promoting a States sustainable enhanced fishery practices.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization protects transboundary aquatic ecosystems by supporting responsible enhanced fishery practices within the States jurisdiction and cooperating to promote sustainable enhanced fishery aquaculture practices. Examples may include various regulations, data, and reports.

13.9 The fishery management organization shall, with due respect to their neighboring States and in accordance with international law, ensure responsible choice of species, siting, and management of enhanced fisheries activities that could affect transboundary aquatic ecosystems.

FAO CCRF (1995) 9.2.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Note. The AT shall ensure that all enhanced fish released are raised to international standards.

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: Management measures are in place ensuring responsible choice of species, siting, and management of enhanced fishery activities, which could affect transboundary aquatic ecosystems.

Current Status/Appropriateness/Effectiveness: There is evidence for the responsible States choice of species, sites, and management procedures. This is considered effective in minimizing potential risks to transboundary aquatic ecosystems.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization, with due respect to their neighboring States and in accordance with international law, ensures responsible choice of species, siting, and management of aquaculture activities which could affect transboundary aquatic ecosystems. Examples may include various regulations, data, and reports.

13.10 The fishery management organization shall consult with their neighboring States, as appropriate, before introducing non-indigenous species into transboundary aquatic ecosystems.

FAO CCRF (1995) 9.2.3

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Note: For example Alaska has a blanket prohibition against introduction of non-indigenous species, or stocks of a species.

Process: There is a policy in place dictating the procedure to be followed prior to the introduction of non-indigenous species.

Current Status/Appropriateness/Effectiveness: This policy includes a requirement that neighboring States be consulted prior to the introduction of a non-indigenous species into a transboundary area. If there is evidence that such an introduction has occurred in the past, there shall also be evidence that the policy has been followed.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization consults with their neighboring States, as appropriate, before introducing non-indigenous species into transboundary aquatic ecosystems. Examples may include various regulations, data, and reports.

13.11 The fishery management organization shall establish appropriate mechanisms—such as databases and information networks to collect, share, and disseminate data related to their enhanced fishery activities—to facilitate cooperation on planning for enhanced fishery development at the States and international level.

FAO CCRF (1995) 9.2.4

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Note. The AT shall ensure that the management has established databases and either makes them freely available or, when requested shares the information.

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: A publically available database has been established.

Current Status/Appropriateness/Effectiveness: The information is disseminated properly and the database is available for public access to facilitate international cooperation.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization has established appropriate mechanisms—such as databases and information networks to collect, share and disseminate data related to their enhanced fisheries activities—to facilitate cooperation on planning for enhanced fisheries development at the States international level. Examples may include various regulations, data, and reports.

13.12 The fishery management organization shall cooperate in the elaboration, adoption, and implementation of international codes of practice and procedures for introductions and transfers of enhanced fish.

FAO CCRF (1995) 9.3.2

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is an international code of practice developed (Turner 1988). Available online here: http://www.fao.org/docrep/009/ae989e/ae989e00.HTM

Current Status/Appropriateness/Effectiveness: The code of practice is being effectively observed by the State of interest.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization cooperates in the elaboration, adoption, and implementation of international codes of practice and procedures for introductions and transfers of enhanced fisheries. Examples may include various regulations, data, and reports.

13.13 The fishery management organization shall, in order to minimize risks of disease transfer and other adverse impacts on wild and enhanced fishery stocks, encourage adoption and promote the use of appropriate practices and procedures for (1) the selection and genetic improvement of broodstock, (2) the introduction of non-native species, and (3) the production, sale and transport of eggs, larvae, fry, broodstock, or other live materials. The fishery management organization shall facilitate the preparation and implementation of appropriate States (or international) codes of practice and procedures to this effect.

FAO CCRF (1995) 9.3.3, 9.3.4

Critical NC Score = 1	Major NC Score = 4	Minor NC Score = 7	Full Conformance Score = 10
Lacking in three or more parameters	**Lacking in two parameters**	**Lacking in one parameter**	**Fulfills all parameters**

Evaluation Parameters

Score Calculation Procedure: *Each Evaluation Parameter has the same numerical value of 3. Meeting all parameters will result in a score of 10 (i.e., full conformance). Not meeting any 1 evaluation parameter will result in a score of 7 (i.e., minor non-conformance). Not meeting any 2 evaluation parameters will result in a score of 4 (i.e., major non-conformance). Not meeting any 3 or more evaluation parameters will result in a score of 1 (critical non-conformance).*

Process: There is a mechanism in place to assess and monitor the risks of disease transfer and other adverse effects on wild and enhanced fisheries s, codified as management objectives in a code of practice or set of procedures.

Current Status/Appropriateness/Effectiveness: Management measures shall be implemented to achieve the objectives described in the code of practice, and there is evidence of their success at doing so. Care is taken to avoid both movement of genotypes or species between catchment areas or river or lake systems, and contamination of local wild genotypes from enhanced animals of the same species. Appropriate practices have been adopted for the genetic improvement of broodstock to avoid impoverishment of their genetic pool. Appropriate procedures are being published for the selection, production, sale, and transport of brood stocks, eggs, larvae, and fry. There has been preparation and implementation of appropriate codes of practice and procedures to accomplish the abovementioned items.

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization, in order to minimize risks of disease transfer and other adverse impacts on wild and enhanced stocks, encourages adoption of appropriate practices for (1) the genetic improvement of broodstock, (2) the introduction of non-native species, and (3) the production, sale, and transport of eggs, larvae, fry, broodstock, or other live materials. States facilitate the preparation and implementation of appropriate international codes of practice and procedures to this effect. Examples may include various regulations, data, and reports.

References Cited

Caddy, J. F. 1996. A checklist for fisheriesresource management issues seen from the perspective of the FAO code of conduct for responsible fisheries. Food and Agriculture Organization of the United States. Fisheries Circular No. 91 FIRM/C9177, Rome. http://audubongulf.org/wp-content/uploads/2015/06/Caddy-Checklist.pdf (Accessed May 31, 2016).

Chuenpagdee, R., L. E. Morgan, S. Maxwell, E. A. Norse, and D. Pauly. 2003. Shifting gears: assessing collateral impacts of fishing methods in the U.S. waters. Frontiers in Ecology and the Environment 1(10):517–524.

DiCosimo, J., R. D. Methot, and O. A. Ormseth. 2010. Use of annual catch limits to avoid stock depletion in the Bering Sea and Aleutian Islands management area (Northeast Pacific). ICES Journal of Marine Science 67(9): 1861-1865. doi: 10.1093/icesjms/fsq060

Sharma, G. D. 1979. The Alaskanshelf: hydrographic, sedimentary, and geochemicalenvironment. Springer-Verlag, New York.

McConnaughey, R. A., and K. R. Smith. 2000. Associationsbetweenflatfish abundance andsurficialsediments in the eastern Bering Sea. Canadian Journal of Fisheries and Aquatic Sciences 57(12):2410–2419.

NPFMC (North Pacific Fishery Management Council). 2011. Fishery management plan for the Bering Sea/Aleutian Islands king and Tanner crabs. North Pacific Fishery Management Council, Anchorage, Alaska. http://www.npfmc.org/wp-content/PDFdocuments/fmp/CrabFMPOct11.pdf

Rosenberg, A., P. Mace, G. Thompson, G. Darcy, W. Clark, J. Collie, and W. Gabriel. 1994. Scientific review of definitions of overfishing in US fishery management plans. NOAA Technical Memorandum NMFS-F/SPO-17.

Smith, K. R., and R. A. McConnaughey. 1999. Surficial sediments of the eastern Bering Sea continental shelf: EBSSED database documentation. U.S. Department of Commerce, NOAA Technical Memorandum, NMFS-AFSC-104. http://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-104.pdf (Accessed May 31, 2016).

Turner, G.E. 1988. Codes of practice and manual of procedures for consideration of introductions and transfers of marine and freshwater organisms. EIFAC/CECPI Occasional paper No. 23. http://www.fao.org/docrep/009/ae989e/ae989e00.HTM (Accessed May 31, 2016).

Appendix 1

Appendix 1 information is to be used for directing AT score the clauses of the Fisheries Standard. It includes metrics and specific guidelines on how to assess fisheries. The various ways in which fisheries are managed are recognized as scientifically valid and defensible, and effective in ensuring fisheries sustainability. **Notwithstandingthespecific guidelinesand assumptionsmade, theATs can find and highlightproblems with fisheries management, if evidence points towards such issues.**

Part 1. Threshold indicators for assessing a fishery stock

Groundfish stocks in Alaska and areaswithsimilarmanagementregime'swill be assessed based on the following threshold indicators.

MSY is the largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological and environmental conditions, fishery technological characteristics (e.g., gear selectivity), and distribution of catch among fleets.

Federally managed groundfish stocks such as sablefish, pollock, Pacific cod, flatfish, and rockfish, managed under the Eastern Bering Sea (EBS), Aleutian Islands (AI) and Gulf of Alaska (GOA) FMPs, Tier 3 (see Part 2) and above, will be assessed based on the following threshold indicators.

- Target Reference point: B_{35}/B_{40}, 35% or 40% of unfished biomass levels.
- Limit Reference point: ½ MSY or $B_{17.5}$, 17.5% of unfished biomasslevels.
- Overfishing: Overfishing is defined as any rate of fishing in excess of the maximum fishing mortality threshold (MFMT). MFMT, also called the *overfishing level control rule* (OFLcontrol rule) is the level of fishing mortality (F), on an annual basis, used to compute the smallest annual level of catch that would constitute overfishing. Overfishing occurs whenever a stock or stock complex is subjected to a level of fishing mortality or annual total catch that jeopardizes the capacity ofa stock or stock complex to produce the maximum sustained yield (MSY) on a continuing basis. The MFMT may be expressed either as a single number (i.e., a fishing mortality rate or F value), or as a function of spawning biomass or other measure of reproductive potential. If catch in year x exceeds the OFL level, the stock is subject to overfishing. This is a global reference point in Alaska that applies to all federally managed/overseen groundfish and crab stocks.
- Overfished: A stock is overfished when it falls below its minimum stocksize threshold (MSST), defined as whichever of the following is greater: ½ the MSY stock size, or the MSST, at which rebuilding to the MSY level would be expected to occur within 10 years if the stock were exploited at the MFMT. If stock biomass dropsbelow MSSTthestock is overfished. This is a globalreference point in Alaska that applies to allfederallymanaged/overseen groundfish and crab stocks.

Direct estimates of B_{MSY} (the biomass that is associated with MSY) are available for Tiers 1 and 2. For Tier 3, no direct estimate of B_{MSY} is available, but $B_{35\%}$ is used as a proxy for B_{MSY}. For Tiers 4–6, neither direct estimates of B_{MSY} nor reliable estimates of B_{MSY} proxies are available.

For stocks managed under Tier 4, which have less data available, reliable point estimates of current biomasscoupled with fishing mortality reference points shall be available. The limit reference pointfor

mortality in this instance is $F_{35\%}$ which equals F_{OFL}. The target fishing mortality shall be less than F_{OFL} and no more than F_{ABC}. The Acceptable bBiological cCatch (ABC), and is a more conservative catch than the OFL limit. By rule, the less data on the stock the larger the buffer between ABC and OFL.

For stocks managed under Tier 5, which have less data than Tier 4 stocks, reliable point estimates of biomass(B)andnaturalmortalityrate (M)areavailable (F_{OFL} = M). Thelimitreferencepointformortality in this instance is $F_{35\%}$ which equals F_{OFL}. The target fishing mortality shall be less than F_{OFL} and no more than F_{ABC}.

For stocks managed under Tier 6, information available includes reliable catch history from 1978 through 1995. The maximum ABC = 0.75 × OFL. The limit reference point for mortality in this instance is $F_{35\%}$ which equals F_{OFL}. The target fishing mortality shall be less than F_{OFL} and no more than F_{ABC}.

With the exception of Tier 6, the MFMT is applied to the best estimate of stock size (which may or may not be age structured) for the coming year to produce the OFL, which is expressed in units of catch biomass. In the case of Tier 6, the MFMT is already expressed in units of catch biomass, meaning that the MFMT and the OFL are identical.

For all federally managed groundfish stocks, in the event that that overfishing is determined to have occurred, an in season action, an FMP amendment, a regulatory amendment, or a combination of these actions shall be implemented by the relevant management organization to end such overfishing.

In theeventthata stockorstockcomplexis determined tobe approaching an overfishedcondition, an in season action, an FMP amendment, a regulatory amendment, or a combination of these actions shall be implemented to prevent overfishing from occurring.

Within two years of such time as a stock or stock complex is determined to be overfished, an FMP amendmentor regulationsshall be designed and implemented to rebuild the stock or stock complexto the MSY level within a time period specified in Section 304(e)(4) of the Magnuson-Stevens Act. If a stock is determined to be in an overfished condition, a rebuilding plan would be developed and implemented for the stock, including the determination of an F_{OFL} and F_{MSY} that will rebuild the stock within an appropriate time frame.

Pacific halibut will be assessed based on the following threshold indicators.

The target reference point is defined as 30% (B_{30} threshold level) of a level defined as the unfished level. The limit reference point is defined as 20% (B_{20} limit level) of this estimated unfished level.

Bering Sea/Aleutian Islands crab will be assessed using the following threshold indicators.

Status determination criteria for crab stocks shall be calculated using a five-tier system that accommodates varying levels of uncertainty. Under the five-tier system, overfishing, overfished criteria, and ABC levels shall be formulatedannually. For crab stocks, the OFL equals MSY, and is derived through the annual assessment process under theframework of the tier system. Overfishing is determined by comparing the OFL with the catch estimates for that crab fishing year.

There shall be a determination of whether a stock is in an overfished condition by comparing annual biomass estimates to the established MSST (defined as ½ B_{MSY}). For stocks where MSST (or proxies) are defined, if the biomass drops below the MSST (or proxy thereof), then the stock is considered to be overfished. MSSTs orproxiesare set forstocks in Tiers 1–4. For Tier 5 stocks, it is not possible to set an MSST because there are no reliable estimates of biomass. For this tier, like the others, measures shall be

taken not to fish above OFL, as a minimum. If overfishing occurred or the stock is overfished, section 304(e)(3)(A) of the Magnuson-Stevens Act, as amended, requires the Council to immediately end overfishing and rebuild affected stocks.

For stock in Tier 1 and 2, the biomass that is associated with MSY, B_{MSY}, shall be treated as the target referencepoint, although MSY itself shall be treated as a upperlimit ratherthan atarget reference point because the OFL is based upon MSY. The (lower) limit reference point corresponds to ½ MSY. For Tier 3 stocks, thetargetreference point B_{MSY} proxy is $B_{35\%}$ (when spawning biomass is reduced to 35% of the unfished condition).

In Tier 4, a default value of M or an M proxy, and a scalar, γ, shall be used in the calculation of the F_{OFL} which allows adjustments in the overfishing definitions to account for differences in biomass measures. The proxy B_{MSY} is the average biomass over a specified time period, or a different value for a specific stock or stockcomplex if betterscientificinformation is available. The MSST, like theotherstocks in Tier 1–3, shall be regarded as the limit reference point for biomass.

ForTier 5 stocksthereare no reliable estimatesofbiomassandonlyhistoricalcatch data areavailable. The OFL is then set equal to the average catch from a specified time period, and ABC is set at less than or equal to 0.9 × OFL. The limit reference point for mortality in thisinstance is $F_{35\%}$ which equals F_{OFL}. The target fishing mortality shall be less than F_{OFL} and no more than F_{ABC}.

State-managed salmon fisheries will be assessed based on the following threshold indicators.

For salmon fisheries in Alaska, overfishing or overfished definitions have been considered impractical and loosely applicable, partly because the multitude of salmon stocks are managed for escapements (rather than for potential catch opportunities, e.g., total allowable catch), which are identified through a prior assessment of abundance. Furthermore, thepotentialforlarge yearly fluctuations in stock abundance and productivity, and the large number of managed stocks (about 300) furthernecessitates an alternative definition of overfishing.

For this reason, an alternative definition of overfished/overfishing is provided, and indicates whether the full suite of management measures is classifiable as responsible fisheries management and fishing practices—where the *stock under consideration* cannot be considered overfished or undergoing overfishing. If the evidence collected for the stocks under assessment does not meet the definition of overfished/overfishing, then it can be said that these stocksare not subject to unsustainable practices leading to overfishing and overfished conditions.

Currently, there are about 300 active salmon escapement goals throughout the state of Alaska. The development of science-based escapement goals is founded in the sustained yield principle highlighted in the Alaska Constitution (Article VIII, section 4) and in statestatute (AS16.05.020). Severalpolicies in Alaska Administrative Code also provide guidance for establishing escapement goals, including the policy for the management of sustainable salmon fisheries (SSFP; 5 AAC 39.222), the policy for statewide salmon escapement goals (5 AAC 39.223), and the policy for the management of mixed stock fisheries (5 AAC 39.220). These policies provide detailed definitions of specific escapement goal types, outline the responsibilities of the Alaska Department of Fish and Game (ADF&G) and the BOF in establishing goals, and provide general direction for development and application of escapement goals. The policies call for review of salmon escapement goals every three years in concert with the regulatory cycle for each management area, and provide process and criteria to be followed. The SSFP defines three types of escapement goals that can be established by ADF&G. These are biological or sustainable escapement goals or a sustainable escapement threshold, defined as follows:

- **Biological Escapement Goal (BEG)** is defined as an escapement range that provides the greatest potential for maximum sustained yield.
- **Sustainable Escapement Goal (SEG)** is defined as a level of escapement, indicated by an index or range of escapement estimates that is known to have provided for sustained yield over a 5- to 10-year period.
- **Sustained Escapement Threshold (SET)** is defined as a threshold level of escapement, below which the ability of the salmon stock to sustain itself is jeopardized.

A summary of Pacific salmon escapement goals in Alaska with a review of escapementsfor the most recent 10-year period is carried out yearly by ADF&G, and the latest report should be consulted for an accurate assessment of escapement goals versus actual escapement to gain a clear understanding of which statewide stocks met or unmet their relative goal. Stocks thatdo not meet their escapement goals for a continued period of 4 or 5 years are usually provided additional management through the *stock of concern* designation.

Due to the scale and extent of salmon resources in Alaska, and the difficulty in managing such a resource, escapement goal performance over one year alone may not necessarily be reflective of the true management quality and performance. Because of this, regulation specifies that when a stock does not meet escapement for a period of 4 or 5 years (described as *chronic inability*), the stock is recommended by ADF&G to the BOF and placed under the *stock of concern* designation.

The SSFP directs ADF&G to provide the BOF with reports on the status of salmon stocks and identify any salmon stocks that present a concern. The SSFPdefinesthree levels of concern (Yield, Management, and Conservation) with yield being the lowest level of concern and conservation the highest level of concern. Chronic inability is defined by the SSFP as "the continuing or anticipated inability to meet expected yields over a 4 to 5 year period."

This designation allows a stock further and more specific management measures[6] to allow rebuilding to sustainable levels. If a stock chronically fails to meet escapement goals, it is reported by ADF&G to the BOF as a stock of concern, and the fishery management plan is amended to protect the productivity of the stock. In addition, a specific action plan associated with the management plan is prepared for any new or expanding salmon fishery or stock of concern. The action plans contain goals, measurable and implementable objectives, provisions for fishery management actions needed to achieve rebuilding goals and objectives, performance measures appropriate for monitoring and gauging the effectiveness of the

[6] From the Alaska Admin Code 5 AAC 39.222 …(3) in the course of review of the salmon stock status reports and management plans the Board of Fisheries in consultation withthe department, will determine if any new fisheries or expanding fisheries, stock yield concerns, stock management concerns, or stock conservation concerns exist; if so, the board will, as appropriate, amend or develop salmon fishery management plans to address these concerns; the extent of regulatory action, if any, should be commensurate withthe level of concerns and rangefrommilder to stronger as concerns rangefrom new and expanding salmon fisheries through yield concerns, management concerns, and conservation concerns; (4) in association with the appropriate management plan, the department and the board will, as appropriate, collaborate in the development and periodic review of an action plan for stocks of concern; action plans should contain goals, measurable and implementable objectives, and provisions, including (A) measures required to restore and protect salmon habitat, including necessary coordination with other agencies and organizations; (B) identification of salmon stock or population rebuilding goals and objectives; (C) fishery management actions needed to achieve rebuilding goals and objectives, in proportion to each fishery's use of, and hazards posed to, a salmon stock; (D) descriptions of new or expanding salmon fisheries, management concern, yield concern, or conservation concern; and (E) performance measures appropriate for monitoring and gauging the effectiveness of the action planthat arederivedfromthe principles and criteria contained in thispolicy; (5) each action plan will include a research plan as necessary to provide information to address concerns; research needs and priorities will be evaluated periodically, based on the effectiveness of monitoring.

action plan, and a research plan that is periodically re-evaluated, as necessary, to provide information to address concerns.

At times, there may be instances where managers decide not to designate a stock that is not meeting its escapement goals over period of 4 or 5 years as a stock of concern. Each species of Pacific salmon has a unique life history with different maturation rates. ADF&G takes that and other known factors, such as quality of the assessment program and/or environmental effects, into account when assessing salmon stocks. An example of this would be pink salmon—their 2-year life history makes them very susceptible to environmental conditions during the return year, which can influence access to the spawning grounds. If this occurs, it is recorded by ADF&G and evaluated in the assessment process to determine stock of concern status. Another example is coho salmon abundance, which can be more heavily influenced by the ocean conditions in their first year than by the numbers of parental spawners. Ocean conditions can create wide swings in overall annual abundance, which is then taken into account by ADF&G when assessing stocks against the SSFP.

If the case of special circumstances, the AT will be seeking specific evidence from ADF&G to justify the action and/or decision taken. The evidence sought shall be assessed by the AT for scientific merit and should be in line with ensuring the stock is managed sustainably in order to return it to desirable levels (i.e., to meet escapement goals).

The above description summarizes the management practices that shall be followed to define whether a given salmon stock has been subjected to responsible fisheries management practices or not. If there is evidence that the above procedure is not followed—for example, if a stock has not met its escapement goals for 6 years and no evidence to explain this is provided, then the stock can be classified as subject to unsustainable practices leading to overfishing and overfished conditions, even if the cause is generally regarded as reduced productivity due to environmental drivers.

Part 2. Harvest control rules and Predefined Harvest Measures

HCR metrics

HCRs metrics have been providedfor all major stock in Alaska and areas with a similar management regime. The HCRs are presented for the groundfish stocks, the BSAI crab stocks, and the halibut stock.

Groundfish harvest control rules

Appendix Table 1. *Description of the groundfish tier system used by North Pacific Fishery Management Councilfor defining fishing–mortality rate related to F_{OFL} and to acceptable biological catch (F_{ABC}) based on the type of information available (Info).*

Tier 1	Info: reliable point estimates of B and B_{MSY} and reliable pdf of F_{MSY}	
	(1a)	Stock status: $B/B_{MSY} > 1$
		$F_{OFL} = m_A$: $F_{ABC} \times m_H$
	(1b)	Stock status: $a < B/B_{MSY} \leq 1$
		$F_{OFL} = m_A \times (B/B_{MSY} - a)/(1 - a)$; $F_{ABC} \leq m_H \leq (B/B_{MSY} - a)/(1 - a)$
	(1c)	Stock status: $B/B_{MSY} \times a$
		$F_{OFL} = F_{ABC} = 0$
Tier 2	Info: reliable point estimates of B, B_{MSY}, F_{MSY}, $F_{35\%}$, and $F_{40\%}$	
	(2a)	Stock status: $B/B_{MSY} > 1$
		$F_{OFL} = F_{MSY}$; $F_{ABC} \leq F_{MSY} \times (F_{40\%}/F_{35\%})$
	(2b)	Stock status: $a < B/B_{MSY} \times 1$
		$F_{OFL} = F_{MSY} \times (B/B_{MSY} - a)/(1 - a)$; $F_{ABC} \leq F_{MSY} \times (F_{40\%}/F_{35\%}) \times (B/B_{MSY} - a)/(1 - a)$
	(2c)	Stock status: $B/B_{MSY} \leq a$
		$F_{OFL} = F_{ABC} = 0$
Tier 3	Info: reliable point estimates of B, $B_{40\%}$, $F_{35\%}$, and $F_{40\%}$	
	(3a)	Stock status: $B/B_{40\%} > 1$
		$F_{OFL} = F_{35\%}$; $F_{ABC} \leq F_{40\%}$
	(3b)	Stock status: $a < B/B_{40\%} \leq 1$
		$F_{OFL} = F_{35\%} \times (B/B_{40\%} - a)/(1 - a)$; $F_{ABC} \leq F_{40\%} \times (B/B_{40\%} - a)/(1 - a)$
	(3c)	Stock status: $B/B_{40\%} \leq a$
		$F_{OFL} = F_{ABC} = 0$

Tier 4	Info: reliable point estimates of B, $F_{35\%}$, and $F_{40\%}$	$F_{OFL} = F_{35\%}$; $F_{ABC} \leq F_{40\%}$
Tier 5	Info: reliable point estimates of B and natural mortality rate M	$F_{OFL} = M$; $F_{ABC} \leq 0.75 \times M$
Tier 6	Info: reliable catch history from 1978 to 1995	OFL = average catch (1978 – 1995), unless otherwise established by SSC; ABC < 0.75 × OFL

a, 0.05 for Tiers 1 – 3, by applying the 10% rule (Rosenberg *et al.*, 1994) to half of the B_{MSY} reference point; *B*, current biomass; subscripts MSY, 35%, and 40%, biomass related to the maximum sustainable yield, or to 35% or 40% of the unexploited biomass (or to the *F* related to those); pdf, probability density function; m_A and m_H, arithmetic and harmonic mean of the pdf.

Source: DiCosimo et al. (2010).

Crab harvestcontrol rules

BSAI Crab HCR

Appendix Table 2. *Five-tier system and metrics for defining overfishing limits (OFLs) and acceptable biological catches (ABCs) limits for crab stocks. The tiers are listed in descending order of information availability.*

Information available	Tier	Stock status level	F_{OFL}	ABC control rule
B, B_{MSY}, F_{MSY}, and pdf of F_{MSY}	1	a. $\frac{B}{B_{msy}} > 1$	$F_{OFL} = \mu_A$ =arithmetic mean of the pdf	
		b. $\beta < \frac{B}{B_{msy}} \leq 1$	$F_{OFL} = \mu_A \frac{B/B_{msy} - \alpha}{1-\alpha}$	ABC≤(1-b_y) * OFL
		c. $\frac{B}{B_{msy}} \leq \beta$	*Directed fishery F = 0* $F_{OFL} \leq F_{MSY}$†	
B, B_{MSY}, F_{MSY}	2	a. $\frac{B}{B_{msy}} > 1$	$F_{OFL} = F_{msy}$	
		b. $\beta < \frac{B}{B_{msy}} \leq 1$	$F_{OFL} = F_{msy} \frac{B/B_{msy} - \alpha}{1-\alpha}$	ABC≤(1-b_y) * OFL
		c. $\frac{B}{B_{msy}} \leq \beta$	*Directed fishery F = 0* $F_{OFL} \leq F_{MSY}$†	
B, $F_{35\%}$, $B_{35\%}$	3	a. $\frac{B}{B_{35\%*}} > 1$	$F_{OFL} = F_{35\%}$ *	
		b. $\beta < \frac{B}{B_{35\%}*} \leq 1$	$F_{OFL} = F^*_{35\%} \frac{\frac{B}{B^*_{35\%}} - \alpha}{1-\alpha}$	ABC≤(1-b_y) * OFL
		c. $\frac{B}{B_{35\%}*} \leq \beta$	*Directed fishery F = 0* $F_{OFL} \leq F_{MSY}$†	
B, M, $B_{msy^{prox}}$	4	a. $\frac{B}{B_{msy^{prox}}} > 1$	$F_{OFL} = \gamma M$	
		b. $\beta < \frac{B}{B_{msy^{prox}}} \leq 1$	$F_{OFL} = \gamma M \frac{B/B_{msy^{prox}} - \alpha}{1-\alpha}$	ABC≤(1-b_y) * OFL
		c. $\frac{B}{B_{msy^{prox}}} \leq \beta$	*Directed fishery F = 0* $F_{OFL} \leq F_{MSY}$†	
Stocks with no reliable estimates of biomass or M.	5		OFL = average catch from a time period to be determined, unless the SSC recommends an alternative value based on the best available scientific information.	ABC≤0.90 * OFL

*35% is the default value unless the SSC recommends a different value based on the best available scientific information.

† An $F_{OFL} \leq F_{MSY}$ will be determined in the development of the rebuilding plan for an overfished stock.

Source: NMFMC (2011).

Pacific halibutharvestcontrol rules

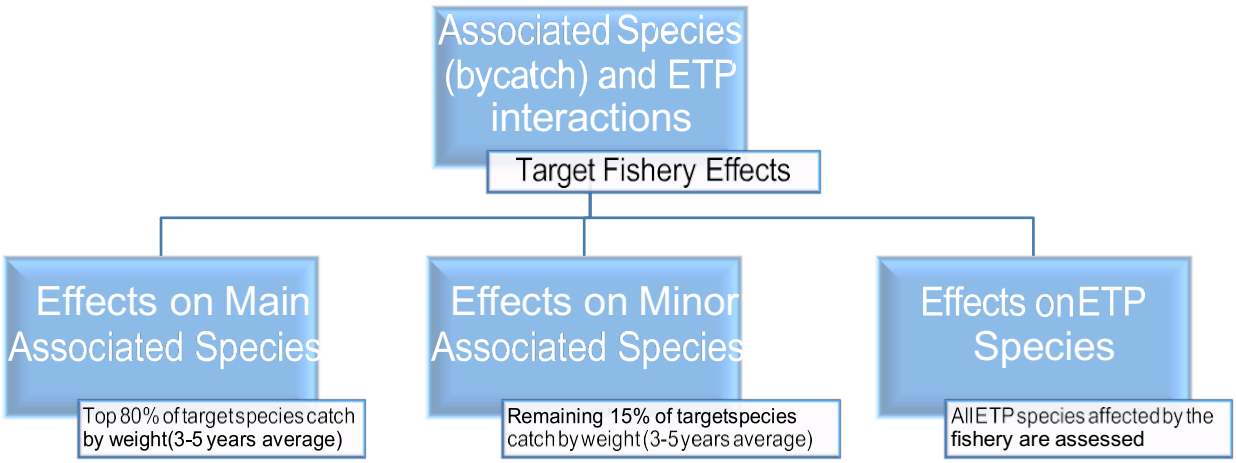
The International Pacific Halibut Commission harvest policy is to harvest 20% of the coastwide exploitable biomass when the spawning biomass is estimated to be above 30% (B_{30} threshold level) of the level defined as unfished. The harvest rate is linearly decreased towards a rate of zero as the spawning biomass approaches 20% (B_{20} limit level) of thisestimated unfished level (i.e., fishing ceases completely if the stock is below 20% of the unfished biomass).

Part 3. Associated catch Metrics and Thresholds

The Fisheries Standard classifies bycatch as major and minor associated species catch. The "Main" and "Minor" bycatch classification together makes up 95% of the associated species bycatch profile of a given targetfishery. Thetop 95% is assessed, whilethebottom 5% is not assessed. Of the 95% assessed, thetop 80% isclassified as Main Associated Species Catch, whilethe bottom 15% is classified as Minor Associated Species Catch. Togethertheymake up 95% of theassociated speciesbycatch profile and this is assessable underdifferent specifications. Forassociatedcatch (i.e., bycatch species),theassessmentteam is required to evaluate the effects of the fishery under assessment on main associated species (top 80% of total bycatch profile by weight), minor associated species (remaining 15% of total bycatch profile by weight), and ETP species (Appendix Figure 1).

- The evaluation for main associated species aims primarily at establishing whether the overall effectsof fishing on theunitofcertificationandallsignificantremovalsareaccountedfor,and thatthe management strategyand relative measuresare effective in maintaining the main associated species fromexperiencing overfishing and other impacts that arelikely to be irreversible or very slowly reversible.

- The evaluation for minor associated species aims primarily at establishing that data is available for them, but an assessment similar to that performed for main associated species is not required. However, if it is suspected or data is available showing that one or more of the minor associated species stocks is likely suffering from overfishing or impaired recruitment/productivity, thenthe effectsof the fishery on thisstockanditssignificance shallbe assessed and scored appropriately. Accordingly, the management strategy and relative measures are effective in maintaining the minor associated species from experiencing overfishing and other impacts that are likely to be irreversible or very slowly reversible.



Appendix Figure 1. *Associated catch evaluation chart.*

Exceptions

If the target fishery catch is above 300,000 tonnes, the minor associated species that make up 10% of the total catch by weight of the targetspecies under consideration will be assessed in the same way as the main associated species.

Furthermore, if a species or species group is highly affected by fishing (e.g., sharks, skates, rockfish, etc.) due to their relative advanced age, low reproductive rates, or slow growth,[7] or if a species is highly susceptible to a given fishing gear or already biologically depleted,[8] then the threshold is 6% of total catch by weight, before the associated species is assessed as a main associated species.

Benthic, low trophic, highly abundant species

It is important to note that in the case of Alaska, catch categorized as *non-target species* include mainly benthic and other low trophic, highly abundant species for which there is not a market, as there might be for species categorized as main or minor associated species. Such non-target species shall be subject to different assessment requirements and may include species such as benthic urochordata, brittle stars, hermit crabs, jellyfish, sea stars, sea urchins, invertebrates, and other miscellaneous (or unidentified) fish. These species do not require the same evaluation (ensuring that neither overfishing nor other impacts that are likely to be irreversible or very slowly reversible are occurring) for cumulative effects as do main and minor associated species, but there shall be some overall evaluation or general index of abundance of the catches so that a trend can be measured throughtime. The *Ecosystem Stock Assessment and Fishery Evaluation Report* published every year by the National Marine Fisheries Service shall be consulted for such indexes.

Vulnerable species that do not fall under this categorization include structural epifauna groups of benthic ecosystems considered to be *habitat area of particular concern* (HAPC) biota and include sponges, anemones, gorgonians (sea fans/sea whips), sea pens, and corals (both hard and soft).

Bycatch considerations for the salmon fishery

Bycatch in the salmon fishery is largely made of other salmon species targeted or incidentally caught with the salmon species of main interest. All salmon species sold commercially are accounted for in the state fish ticket system, ameliorating significantly bycatch issues that are usually considered significant in other fisheries.

[7] Many researchers have identified that body size predicts vulnerability to population decline and species extinction. Populations and species with larger individuals are more likely to decline and go extinct than those with smaller individuals. However, this relationship between body size, population decline, and extinction is probably because larger animals tend to have other life-history traits—like lower rates of reproduction, slower growth rates, and delayed sexual maturity—which make them less able to recover when the mortality rate increases. Slow growing fish such as sharks, skates, and rockfish in Alaska are recognised as being under constant risk of overexploitation partly because they mature late and partly because they give birth to fewer young. As a rule of thumb, slow-growing species can be categorised as those species that require over 10 years to reach maturity.

[8] A species can be defined as depleted when its stock status has decreased below limit reference points or equivalent biologically meaningful proxies (e.g., historical lowest level of observed stock biomass), or when the catches are well below historical levels, irrespective of the amount of fishing effort exerted (http://www.fao.org/newsroom/common/ecg/1000505/en/stocks.pdf).

Part 4. Metrics for assessing ETP species

ETP species must be acknowledged as such when recognized by national legislation adopted at the state and federal level, or when recognized through a binding international agreement. Alternatively, species listed under Appendix 1 of the Convention on International Trade in Endangered Species (CITES) or under the International Union for the Conservation of Nature (IUCN) Redlist and impacted negatively[9] by the fishery (i.e., direct or indirect mortality) shall be assessed as ETP unless it can be proven that their status in thewaters of the fishery in question is abovethepoint where recruitment is impaired or where other similar proxies indicate that the species is not biologically depleted.

ETP species categories

The ATsshallqualify ETPspeciesbased on recognized state and federalETPspecies. For example in Alaska asof 2016, these include the following species: blue whale (*Balaenoptera musculus*), bowhead whale (*Balaena mysticetus*), Cook Inlet beluga (*Delphinapterus leucas*), Eskimo curlew (*Numenius borealis*), fin whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaeangliae*), leatherback turtle (*Dermochelys coriacea*), North Pacific right whale (*Eubalaena japonica*), Northern sea otter (*Enhydra lutris kenyoni*), distinct population segment sei whale (*Balaenoptera borealis*), short-tailed albatross (*Phoebastria albatrus*), sperm whale (*Physeter macrocephalus*), Steller's eider (*Polysticta stelleri)*, and the Steller sea lion (*Eumetopias jubatus;* west of 144°).

ETP species scoring guidance

The ETP species assessment within the Fisheries Standard shall receive a full score if ETPs are managed starting with a policy or plan (i.e., legally recognized as ETPs, with formal and agreed management plans and measures in place) and followed with effective management measures that achieve the objectives of the agreed plan for management of ETP species.

[9] For ETP species, interactions with the stock under consideration shall not cause departure from agreed management measures, such as those designed to allow for species restoration across a given geographical area. In other words, any interaction with or bycatch of ETP species shall be minimal and not considered significant, and/or disruptive in terms of ensuringthe effectiveness of agreed management measures set up in order to achieve the management and conservation objectives for the ETP species in question.

Part 5. Habitatindicators

Essential fish habitats

Particular habitats may determine the carrying capacity of target, bycatch, or ETP species, and a mosaic of habitats may be necessary for some species to complete their life cycle or determine the overall composition oftheecosystem. Essentialfish habitats(EFHs) aredefined in the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) as "those watersand substrate necessaryto fish for spawning, breeding, feeding, or growth to maturity."

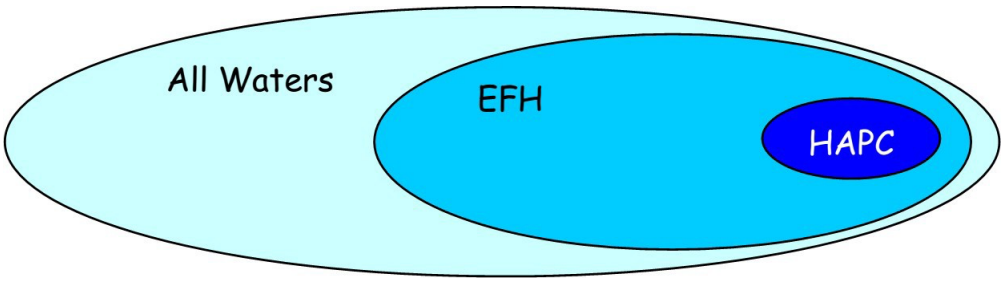
EFHfor species is usually determined to be the general distribution of a species described by life stage. Generaldistribution is a subset of a species' total populationdistribution, and is identified asthe distributionof95%of thespeciespopulation,fora particularlife stage, if lifehistorydataareavailablefor the species. Where information is insufficient, and a suitable proxy cannot be inferred, the EFH is not described, but general distribution is usually used to designate EFHs for all stock conditions whether or not higher levels of information exist, because the available higher level data are not sufficiently comprehensive to account for changes in stock distribution (and thus habitatuse) over time.

Habitat areas of particular concern

50 CFR 600.815(a)(8) provides guidance to the NPFMC in identifying HAPCs. HAPCs are areas within EFHs (Appendix Figure 2) that are of particular ecological importance to the long-term sustainability of managed species, are of a rare type, or are especially susceptible to degradation or development. HAPCs are meant to indicate greater focus of conservation and management efforts. FMPs should identify specific types or areas of habitat within EFH as HAPCs based on one or more of the following considerations:

1. **the importance of the ecological function provided by the habitat;**
2. **the extent to which the habitat is sensitive to human-induced environmental degradation;**
3. **whether, and to what extent, development activities are, or will be, stressing the habitat type; and**
4. **the rarity of the habitat type.**

In order to protect HAPCs, certain habitat protection areasand habitat conservation zones have been designated. A habitat protection area is an area of special, rare, habitat features where fishing activities that may adversely affect the habitat are restricted.



Appendix Figure 2. *Conceptualrepresentation of EFHs and HAPCs withinthe context of Alaska's jurisdiction waters.*

Fishing effects on habitats

Impacts from the effects of fishing (gear) on sensitive marine habitats (e.g., HAPCs) shall be assessed by the AT Such evaluation shall consider the effects of bottom contact gear (i.e., benthic trawl, pelagic trawl, dredge, pots, benthic longline) on HAPCs and/or other vulnerable benthic habitats (biogenic or structurally complex, that may be outside HAPCs designation) and focus on the impacts and the effectiveness of the management measures in place.

Habitatsare assessed in relation to theeffects of thefishery on thestructure and role of the habitats. Of these, significant biotic components are groups considered to be structural epifauna. For example in the BSAI these HAPC biota include sea pens, sea whips, corals, anemones, and sponges (although corals are rarely encountered on the Bering Sea shelf). Groups considered to be HAPC biota in the AI include sea pens, sea whips, corals, anemones, and sponges. Structural epifauna groups considered to be HAPC biota in the GOA include sponges, anemones, gorgonians (sea fans, sea whips), sea pens, and corals (both hard and soft). While the productivity and regenerative ability of biogenic habitats would affect their resilience under fishing, and may be useful surrogates for consideration of status and reversibility, it is the ecological role of thehabitat and the ecosystemservicesthat it providesthatshall be the intentoftheassessment.

Habitat/substrate type in the Bering Sea, Aleutian Islands, and the Gulf of Alaska

The distribution of benthic sediment types in the EBS shelf is related to depth. Considerable local variability is indicated in areas along the shore of Bristol Bay and the north coast of the Alaska Peninsula, as well as west and north of Bristol Bay, especially near the Pribilof Islands. Nonetheless, there is a general pattern whereby nearshore sediments in the east and southeast on the inner shelf (0 to 50 m depth) often are sandy gravel and gravelly sand. These give way to plain sand farther offshore and west. On the middle shelf (50 to 100 m), sand gives way to muddy sand and sandy mud, which continue over much of the outer shelf (100 to 200 m) to the start of the continental slope. Sediments on the central and Northeastern shelf (including Norton Sound) have not been so extensively sampled, but Sharma (1979) reports that, while sand is dominant in places here, as it is in the southeast, thereare concentrations of silt both in shallow nearshore waters and in deep areas near the shelf slope. In addition, there are areas of exposed relic gravel, possiblyresulting fromglacial deposits. These departuresfrom a classic seaward decrease in grain size are attributed to the large input of fluvial silt from the Yukon River and to flushing and scouring of sediment through the Bering Strait by the net northerly current. McConnaughey and Smith (2000) and Smith and McConnaughey (1999) describe the available sediment data for the eastern Bering Sea shelf. These data were used to describe fourhabitat types. The first, situatedaround the shalloweasternand southern perimeterandnear the Pribilof Islands, hasprimarily sand substrates with a little gravel. The second,acrossthe centralshelf outto the100 m contour, hasmixtures of sandand mud. A third, westof a line between St. Matthew and St. Lawrence islands, hasprimarily mud (silt) substrates, with some mixing with sand. Finally, theareasnorth and east of St. Lawrence Island, including Norton Sound, have a complex mixture of substrates.

The AI has complicated mixes of substrates, including a significantproportion of hard substrates(pebbles, cobbles, boulders, and rock), but data are not available to describe the spatial distribution of these substrates.

Theshelf in theNortheastpart oftheGOA isrelativelywide(up to 100km). Thedominant shelfsediment is clay silt that comes primarily from either the Copper River or the Bering and Malaspina glaciers. When the sediments enter the GOA, they are generally transported to the west. Sand predominates nearshore, especially near the Copper River and the Malaspina Glacier. Most of the western GOA shelf (west of Cape Igvak) consists of slopes characterized by marked dissection and steepness. The shelf consists of many banks and reefs with numerous coarse, clastic, or rocky bottoms, as well as patchy bottom sediments. In

contrast, the shelf near Kodiak Island consists of flat, relatively shallow banks cut by transverse troughs. The substrate in the areafrom Near Strait and close to Buldir Island, Amchitka, and Amukta Passes is mainly bedrock outcrops and coarsely fragmented sediment interspersed with sand bottoms. In the GOA there are variety of seabed types such as gravely sand, silty mud, and muddy to sandy gravel, as well as areas of hardrock.

Habitat Assessment Element 1

The effects of fisheries on sensitive habitats shall be reduced to a minimum percentage of the total area. Assessment teams shall address the following elements.

- Identifythe spatialfootprint (i.e., totalarea in Km^2 or nm^2) ofthefishery on marine habitats(e.g., based on maps of fishing fleet distribution or other data).
- Identify the general range of habitat type/substrate (e.g., sand, muddy, gravel and pebble, rocky reefs, kelp, other biogenic habitats) affected and unaffected by the spatial footprint of the fishery.
- Assess the percentage area of overlap of the fishery with known sensitive habitats using available data. Sensitive habitats include HAPCs, other areas of known distribution rich in structural epifauna, areas of particular importance for ETP species, and closed areas which may be set up for habitat, species conservation, or both.
- If the fishery is having a significant negative effect on sensitive habitats, the assessment team shall take into account (1) the degree of disturbance (% of total sensitive areaoverlapping with fishery); (2) the sensitivity of the habitat (e.g., habitat susceptible or encounterable/accessible by fishing gear, or exposed to routine, occasional, little or no fishing disturbance or natural perturbation); and 3) the projected recovery rate of such habitats (e.g., fast, medium, slow) in the presence and absence of fishing. Furthermore, management measures shall be in place (e.g., at the federal or state level) to minimize/mitigate these effects.
- Assess and estimate the effects of the fishery footprint on non-biogenic, low physical complexity or low-sensitivity habitats (e.g., mud, sand, pebble/cobble), where the habitat is not considered tobe significantlyaffected bybottomimpactgear or where the recoveryrate of thesehabitatsis believed to be fast. Evaluate whether the effects on this class of habitats are considered significant. For example, EFH are generally considered to include the general distribution of the species for particular life stage. If the species is at target levels in terms of stock status and fishing mortality, then it can be inferred that the effects on the EFH for the species are likely not significant.

Assessment Element 2

In addition to the previouselements, thelevel of fishery impact shall be assessedtaking into account geartype, fisherylocation,andanygearmodificationsor fisherymanagementmeasuresadopted, to reduce physical impact on sensitive habitats. The fishery shall not adversely affect the physical structure of the seafloor or vulnerable associated biological communities at a scale considered significant given theoverall extent of the habitat type by management and/orbest scientific evidence available. The fisherymanagementorganization (FMO)shall minimize and mitigate effects on sensitive biogenic habitats(e.g., gorgonians)[1] and on structurally important physical features (e.g. seamounts and boulders)whichare affected at a significantspatialscale byhigh-impact gears(e.g., bottomtrawlsor dredges). In assessing the significance of any effects, the assessor shall consider the uniqueness and resilience ofhabitats, including recoverytime. The Fishery ManagementOrganization (FMO)shall

mitigate such negative effects through substantial spatial protection, gear modifications and/or through the use of other highly effective methods.

[1]50 CFR 600.815(a)(8) provides guidance to the North Pacific Fishery Management Council in identifying habitat areas of particularconcern(HAPCs). HAPCs areareas within EFHsthat are of particularecological importance to thelong-term sustainability of managed species, are of a rare type, or are especially susceptible to degradation or development. HAPCs are meant to indicate greater focus of conservation and management efforts.

In the BSAI these HAPC biota include sea pens, sea whips, corals, anemones, and sponges (although corals are rarely encountered on the Bering Sea shelf). Groups considered to be HAPC biota in the AI include sea pens, sea whips, corals, anemones, and sponges. Structural epifaunagroups considered tobe HAPC biota in the GOA include sponges, anemones, gorgonians (sea fans, sea whips), sea pens, and corals (both hard and soft).

These are described as such in the EBS, AI and GOA Groundfish FMPs.

Assessment Element 3

Following the previous two habitat assessment elements, ATs shall evaluate management actions that have been implemented to mitigate potential negative effects of gear effects on sensitive habitats. Elements that can decrease the risk and impact of a fishing gear on a habitat include management measures intended at freezing the footprint of the fishery, gear modification raising the bottom trawl sweeps off the seafloor at various spacing minimizing damage (by up to 90%) on the structural complexity of the physical environment and on biogenic habitats, and the protection of HAPC and other sensitive areas through area closures.

As an example, gearmodification in Alaska raising the bottom trawl sweepsoff the seafloorhave been found to reduce damage by up to 90% on the structural complexity of the physical environment andon biogenichabitats, as well as decreasing bycatch and damage of crabs and other benthic species. Because of this, the colorsand relative risk in thefishing gearimpacttableare considered relative andpotentially subject to discounting factors (i.e. management measures, gear modifications etc.), if those are available.

Habitat scoring guidance

The ATs maingoal, when considering impacts on habitat, shall be to conserve andenhance EFH by halting theincrease in fishing footprint and any additional damage to essential fish habitats, with reference to historical records. The EFH 5-Year Review is the mechanism that shall be followed to ensure new information about EFH can be incorporated, and changes can be monitored and accordingly assessed. Assessment teams shall review the EFH 5-Year Review, which includes a review of important fishing gear impacts on EFH (e.g., trawl gear modifications and relative habitat effects). Assessment teams shall monitor the changes to EFH occurring due to the fishery between one EFH revision and another, as they occur every 5 years, starting with the two most recent available (https://alaskafisheries.noaa.gov/sites/default/files/efh_5yr_review_sumrpt.pdf) documents, keeping in mind thatnew EFH changes are included in thefederal FMPs as they arise. An *adverse effect* is any impact that reduces the quality and/or quantity of EFH.

Based on an evaluation of the above parameters the fishery can be scored based on expert opinion as follow, depending on the effects it has on habitats:

Qualitative score description	Score
There is a high likelihood that the unit of certification is not causing significant, non-reversible harm on essential habitats for the stock under consideration and on habitats that are highly vulnerable to damage by the fishing gear of the unit of certification.	*Full Conformance*
There is a small likelihood that the unit of certification is causing significant, non-reversible harm on essential habitats for the stock under consideration and on habitats that are highly vulnerable to damage by the fishing gear of the unit of certification.	*Minor Non-Conformance*
There is a moderate likelihood that the unit of certification is causing significant, non-reversible harm on essential habitats for the stock under consideration and on habitats that are highly vulnerable to damage by the fishing gear of the unit of certification.	*Major Non-conformance*
There is a high likelihood that the unit of certification is causing significant, non-reversible harm on essential habitats for the stock under consideration and on habitats that are highly vulnerable to damage by the fishing gear of the unit of certification.	*Critical Non-conformance*

Example - Flatfish fishery of the Bering Sea. Habitat Effects.

- Habitat Element 1. *The effects of fisheries on sensitive habitats shall be reduced to a minimum percentage of the total area.*

  Thisexample is provided not as a means to "assess" or "strictly prescribe" the type of conformance level an assessment effort would assign but instead ***guide with more clarity*** *in terms of how potentially negative elements can be mitigated through effective measures, thus resulting in accurate conformity levels.*

  Note the following information is only current through a 2015 assessment effort and assessment teams are responsible for collecting and using all of the most up to date information.

  From 2006 to 2014 about 53,000 square miles of the EBS have beendisturbed annuallyby bottom trawlgear (NMFS, Ecosystem SAFE 2015). The Bering Sea area surveyed by NMFS is about 145,000 square *nautical miles*. The habitat footprint freezing measures implemented in 2008, prohibitedbottomtrawling in a previouslyunfished deep slope and basinarea (47,000 nm^2), and three habitat conservation areas around St Matthew Island, St Lawrence Island, and an area encompassing Nunivak Island-Etolin Strait-Kuskokwim Bay. The NPFMC also established the Northern Bering Sea Research Area that included the shelf waters to the north of St. Matthew Island (85,000 nm^2). The entire Northern Bering Sea Research Area is also closed to bottom trawling while a research plan is developed.

  The EFH Environmental Impact Statement (EIS) evaluated the effects of fishing on habitat by using a quantitative mathematical model developed by the National Marine Fisheries Service (NMFS) Alaska Fisheries Science Center(NMFS 2005, Appendix B). Themodelestimated the proportional reductions in habitat features relative to an unfished state, assuming that fishing

will continue at the current intensity and distribution until the alterations to habitat and the recovery of disturbed habitat reach equilibrium. The model provided a tool for bringing together all available information on the effects of fishing on habitat, such as fishing gear types and sizes used in Alaska fisheries, fishing intensity information from observer data, and gear impacts and recovery rates for different habitat types. Due to the uncertainty regarding some input parameters (e.g., recovery rates of different habitat types), the results of the model were displayed aspointestimates, as well asa range of potentialeffects. Nevertheless, the model was deemed to provide the best scientific evidence available for assessing effects of fishing on habitat by NMFS, NPFMC , NPFMCScientific and Statistical Committee(SSC), andthe Councilof Independent Experts.

The analysis indicated that fishing, and particularly nonpelagic trawling, has long-term effects on benthic habitat features off Alaska, but these effects were considered to have minimal impacts on fish stockproductivity.

Within the model, if the current pattern of fishing intensity and distribution continued into the future, livinghabitatfeaturesthatprovide managed specieswith structure for refuge would be reduced by 0 to 11 percent in eachhabitat area, with the largest reduction occurring on soft substrates of the Aleutian slope area. There would be almost no reduction (0 to 3 percent) in infaunal and epifaunal preyfor managed species. Viewedanotherway, habitat loss due to fishing off Alaska is relatively small overall, with most of theavailable habitats unaffected by fishing (infaunal preyare 97 to 100 percent unaffected, epifaunalpreyare 97 to 100 percent unaffected, living structure is 89 to 100 percent unaffected, and hard corals are 84 to 98 percent unaffected).
Potential effects of fishing activities on sessile invertebrates have been of particular concern, as theyaccount for thehigherLEI values in the sand/mud habitat ofthe Bering Sea. There are a number of benthic invertebrate species in the Bering Sea that as a group are considered emergent epifauna available for potential use as fish habitat, including sponges, bryozoans, sea raspberries, sea whipsand seapens, anemones, andascidians. Sea whipsand seapens (Pennatulacea)are distributedalongthe slope area. Sponges (Porifera)are found on the continental shelf, particularly in outer Bristol Bay. Anemones (Actiniaria), ascidians (Ascidiacea), andbryozoans (Ectoprocta) are found at mid-depths of the shelf, particularly in the vicinityof the Pribilof Islands and in Bristol Bay. Information on theeffects of trawl fisheries on these invertebrate species is provided in Appendix B of the EFH EIS (NMFS 2005). A comprehensive review of thedistribution ofthese invertebratescan be found in the EFHEIS and in Malechaet al. (2005). A review of habitat conservation measures implemented for Alaska fisheries prior to implementation of EFH and HAPC Identification and Protection Measures is provided in the EFH EIS (NMFS 2005). http://www.afsc.noaa.gov/REFM/Docs/2015/ecosystem.pdf

- Habitat Element 2. *The level of gear impact shall be assessed, along with the modification implemented, to reduce the physical impact on sensitive habitats.*

  Thisexample is provided not as a means to "assess" or "strictly prescribe" the type of conformance level an assessment effort would assign but instead ***guide with more clarity*** *in terms of how potentially negative elements can be mitigated through effective measures, thus resulting in accurate conformity levels.*

In this case because of the areas closures and gear footprint assessment in element 1, trawl sweeps modifications (see next element) decreasing trawl sweeps contact with seabed by about 90% in the EBS and Central GOA, and the extensive Steller Sea Lion trawl closure in the Aleutian Islands the relative risk shall be reduced accordingly.

- Habitat Element 3. *Management measures implemented to mitigate effects.*

  This example is provided not as a means to "assess" or "strictly prescribe" the type of conformance level an assessment effort would assign but instead ***guide with more clarity*** *in terms of how potentially negative elements can be mitigated through effective measures, thus resulting in accurate conformity levels.*

  In June 2007, the NPFMC adopted precautionary measures to conserve benthic fish habitat in the Bering Sea by "freezing the footprint" of bottom trawling by limiting trawl effort only to those areas more recently trawled. The measure was implemented in 2008. The Bering Sea area surveyed by NMFS is about 145,000 nm^2 and fisheries occur within this area. The habitat footprint freezing measures implemented in 2008, prohibited bottom trawling in a previously unfished deep slope and basin area (47,000 nm^2), and three habitat conservation areas around St Matthew Island, St Lawrence Island, and an area encompassing Nunivak Island-Etolin Strait-Kuskokwim Bay. The NPFMC also established the Northern Bering Sea Research Area that included the shelf waters to the north of St. Matthew Island (85,000 nm^2). The entire Northern Bering Sea Research Area is also closed to bottom trawling while a research plan is developed. Considering all Alaska, the Alaska EEZ extends over 1,455,613 nm^2. To date, over 655,162 nm^2 of the Alaska EEZ have been closed to bottom trawling. In addition, over 5,400 nm^2 of habitat have been protected from commercial bottom contact gear. These areas include coral gardens, Primnoa coral thickets, and all seamounts off Alaska.
  http://www.npfmc.org/wp-content/PDFdocuments/catch_shares/TrawlMod509.pdf

  In addition to closed area type measures, trawl sweep gear modification implemented for the EBS, AI and Central GOA bottom trawl fleets resulted in a decrease of the trawl sweeps contact with seabed by about 90% and was effective in reducing trawl sweep impact effects to basket stars and sea whips, as well as decreasing crabby catch mortality. Some contact with living habitat species would continue from the elevating devices contacting the bottom. (NMFS, Ecosystem SAFE 2015). Fishery-wide adoption of devices to reduce seafloor contact with trawl sweeps is expected to be significantly positive and add to the effects of extensive closed areas.

Part 6. Ecosystem assessment

Ecosystem assessment indicators

Ecosystems consist of populations and communities of interacting organisms and their physical environment that form a functional unit and have a characteristic trophic structure and material cycle (i.e., how energy or mass moves among the groups). The broad objectives of ecosystem management include maintenance of predator/prey relationships, diversity, energy flow, and balance. These general objectives cover the trophic structure that links species, the material cycles of energy flow, and the many types of diversity that characterize marine life. Ecosystems are dynamic, and the criteria for determining the significance of impacts include the natural ranges of variability seen in ecosystem characteristics.

Accordingly, assessment teams shall assess and examine the following elements.

- Assess the contribution of the fishery under consideration to bycatch of (1) prohibited species, (2) HAPC biota, (3) marine mammals and birds, and (4) other sensitive non-target species. Accordingly, the fishery shall not have significant effects on the groups specified. Each of these groups shall be managed accordingly (in a coherent and effective way) by the relevant authorities and removals shall be monitored to ensure the totality of these groups is not being significantly affected by the fishery (e.g., by excessive removals leading to minimal biological limits). Indices of abundance of HAPC biota, key affected prohibited species, key affected marine mammals and birds, and other sensitive non-target species, as appropriate can be useful to assess this element.
- Assess that food webs are not negatively impacted by evaluating, based on available data and information, whether the fishery is likely to have an effect on species and functional diversity in the ecosystem (e.g., by depleting important predator groups, keystone predators, or important prey species, if appropriate). Species such as walleye pollock shall also be managed accordingly to avoid negative effects on the delicate food web system. Indices of local species richness and diversity (e.g., Shannon index), if available, can provide some important information to assess this element.
- The fishery shall be sufficiently dispersed in space and time relative to important predators needs (in space and time if known) and relative to important spawning components, to avoid depletion in particular areas (if data at this resolution is available) with potential effects on dependent species. Additionally, there shall be a limited spatial and temporal concentration of fishery impacts on important forage fish.[10] Indexes of fishing distribution and forage fish abundance can be useful to assess this element.
- The fishery-specific contribution to discards and offal production shall be assessed and the fishery shall be managed efficiently and effectively to reduce waste and minimize potential long-term

[10] Forage fishes are of particular concern in Alaska because the decline of these species is considered to be a potential cause of dramatic declines in populations of Steller sealions, fur seals, and seabirds during the past 20 years. Forage fishes are abundant, schooling fishes preyed upon by many species of seabirds, marine mammals, and other fish species. They provide important ecosystem functions by transferring energy from primary or secondary producers to higher trophic levels. Major forage fishes in Alaska include juvenile walleye pollock, Pacific herring, Pacific sand lance, capelin, eulachon, and Atka mackerel. Other species, such as Pacific salmon juveniles, are sometimes important (usually seasonally or locally). The forage species category was created by Amendment 36 and 39 to the BSAI and GOA FMP. This category includes eight families of fish (Osmeridae, Myctophidae, Bathylagidae, Ammodytidae, Trichodontidae, Pholidae, Stichaeidae, and Gonostomatidae) and one order of crustaceans (Euphausiacea). These amendments prohibit the directed fishery on any forage species.

changes in ecosystem biomass, respiration, production, or energy cycling that are outside the range of natural variability.

Overall, the information required to assess the elements specified above may be quantitative or qualitative, depending on data availability. Such information may be inferred from a range of existing indices, other observations, data, expert knowledge, or verifiable community knowledge.

Ecosystem scoring guidance

Based on an evaluation of the above parameters the fishery can be scored based on expert opinion as follows, depending on the effects it has on habitats.

Qualitative score description	Score
There is a high likelihood that the unit of certification, including any enhancement activities, is not causing adverse impacts on the structure, processes and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible.	*Full Conformance*
There is a small likelihood that the unit of certification, including any enhancement activities, is causing adverse impacts on the structure, processes and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible.	*Minor Non-Conformance*
There is a moderate likelihood that the unit of certification, including any enhancement activities, is causing adverse impacts on the structure, processes and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible.	*Major Non-conformance*
There is a high likelihood that the unit of certification, including any enhancement activities, is causing adverse impacts on the structure, processes and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible.	*Critical Non-Conformance*

Ecosystem assessment for salmon fisheries

Note that the illustrated metrics for habitat and ecosystem assessment is applicable to crab and groundfish/rockfish but not for salmon fisheries. For salmon fisheries, fundamental clause 13 is specific to the ecosystem effects of enhancement activities and is composed of specific clauses geared toward the assessment of adverse impacts on the structure, processes, and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible.

Example- Atka mackerel fishery of the Aleutian Islands.Ecosystem Effects.

- Ecosystem sub-element 1. *Assess the contribution of the fishery under consideration to bycatch of (1) prohibited species, (2) HAPC biota, (3) marine mammalsand birds, and (4) other sensitive non-target species*.

  Thisexample is provided not as a means to "assess" or "strictly prescribe" the type of conformance level an assessment effort would assign but instead ***guide with more clarity*** *in terms of how potentially negative elements can be mitigated through effective measures, thus resulting in accurate conformity levels.*

Note the following information is only current through a 2015 assessment effort and assessment teams are responsible for collecting and using all of the most up to date information.

The levels of bycatch in the Atka mackerel fishery of prohibited species, forage fish, HAPC biota, marine mammals, birds, and other sensitive non-target species is relatively low. The Atka mackerel fishery is considered to have very low bycatch levels of some species of HAPC biota, e.g. seapens and whips. The bycatch of sponges and coral in the Atka mackerel fishery is highly variable but overall a small percentage of the total take of sponges and corals in the AI fisheries

Ecosystem sub element 2. *Assess that food webs are not negatively impacted.*

This example is provided not as a means to "assess" or "strictly prescribe" the type of conformance level an assessment effort would assign but instead ***guide with more clarity*** *in terms of how potentially negative elements can be mitigated through effective measures, thus resulting in accurate conformity levels.*

Analyses of historic fishery CPUE revealed that the fishery may create temporary localized depletions of Atka mackerel, and historic fishery harvest rates in localized areas may have been high enough to affect prey availability of Steller sea lions. The localized pattern of fishing for Atka mackerel could have created temporary reductions in the size and density of localized Atka mackerel populations which may have affected Steller sea lion foraging success during the time the fishery was operating and for a period of unknown duration after the fishery closed. Some preliminary results of sensitivity analysis suggest that Atka mackerel foraging in the Aleutian Islands may have a relatively strong competitive effect on walleye pollock distribution and abundance, as opposed to the Bering Sea where pollock may be more bottom-up (prey) controlled, or the GOA where pollock may be top-down (predator) controlled. It is possible that this is a mitigating or underlying factor for the geographical separation between Atka mackerel and pollock as a partitioning of foraging habitat. Atka mackerel are consumed by a variety of piscivores, including groundfish (e.g., Pacific cod, Pacific halibut, and arrowtooth flounder), marine mammals (e.g., northern fur seals and Steller sea lions), skates, and seabirds (e.g., thick-billed murres, tufted puffins, and short-tailed shearwaters). Apportionment of Atka mackerel mortality between fishing, predation, and unexplained mortality, based on the consumption rates and food habits of predators averaged over 1990-1994 as follows: approximately 20% of the Atka mackerel exploitation rate (as calculated by stock assessment) was due to the fishery, 62% due to predation, and 18% "unexplained", where "unexplained" is the difference between the stock assessment total mortality and the sum of fisheries exploitation and quantified predation. This unexplained mortality may be due to data uncertainty, or Atka mackerel mortality due to disease, migration, senescence, etc.

Major forage fishes in Alaska include juvenile walleye pollock, Pacific herring, Pacific sand lance, capelin, eulachon, and Atka mackerel. Other species, such as Pacific salmon juveniles, are sometimes important (usually seasonally or locally). The forage species category was created by Amendment 36 and 39 to the BSAI and GOA FMP. The assessment team should consider the key management strategy and objectives as specified in these plans to establish if the take is in line with FMP objectives. Another element of assessment for key prey species within the scoring guidance provides references to the Lenfest report for forage species.

General harvest guidelines based on Lenfest report: " in fisheries with an intermediate level of information (which will include most well-managed forage fisheries), there must be at least 40% of virgin or unfished biomass (B0) left in the water, and fishing mortality should be no higher than 50% of FMSY. Low information fisheries should leave at least 80% of B0 in the water. High information fisheries (which have a high information not just on the fished stock, but the full ecosystem), may exceed these reference points if justified by the science, but in no case should fishing mortality exceed 75% of FMSY or biomass fall below 30% of B0.

The approximate 20% take by the fishery falls within the thresholds recommended in the Lenfest report and therefore in other areas of the RFM V2.2 Scoring Guidance

- Ecosystem sub element 3. *The fishery shall be sufficiently dispersed in space and time relative to important prey/predators needs.*

  This example is provided not as a means to "assess" or "strictly prescribe" the type of conformance level an assessment effort would assign but instead ***guide with more clarity*** *in terms of how potentially negative elements can be mitigated through effective measures, thus resulting in accurate conformity levels.*

  Atka mackerel are an important prey for Steller sea lions, and management measures have been taken to reduce the impacts of an Atka mackerel fishery on Steller sea lions. Since June 1998, the Atka mackerel fishery has been dispersed, both temporally and spatially, to reduce localized depletions of Atka mackerel. The TAC is now being equally split into two seasons, and the amount taken within sea lion critical habitat is limited. Steller sea lion protection measures have spread out Atka mackerel harvests in time and space through the implementation of seasonal and area-specific Total Allowable Catch (TAC)s and harvest limits within sea lion critical habitat. These measures were in place from 2011 to 2014. Revised RPAs were implemented in 2015. For the 2015 fishery, the Area 543 Atka mackerel TAC was set to less than or equal to 65 percent of the Area 543 ABC. In Area 542, there are expanded area closures and no requirement for a TAC reduction. Concentration of catches in time and space is still an issue of possible concern and research efforts continue to monitor and assess the availability of Atka mackerel biomass in areas of concern. Also, in some cases, the sea lion protection measures have forced the fishery to concentrate in areas outside of critical habitat that had previously experienced lower levels of exploitation. The impact of the fishery in these areas outside of critical habitat is unknown. Overall, SSL and EFH closures in the AI are extensive and do carry a significant weight in terms of minimizing potential ecosystem effects from fisheries in those areas. Ats are directed to specifically account for these protection measures when assessing if the fishery has been effectively dispersed in space and time to ensure important prey/predator needs.

- Ecosystem sub element 4. *The fishery-specific contribution to discards and offal production shall be assessed.*

  This example is provided not as a means to "assess" or "strictly prescribe" the type of conformance level an assessment effort would assign but instead ***guide with more clarity*** *in terms of how*

potentially negative elements can be mitigated through effective measures, thus resulting in accurate conformity levels.

Bering Sea/Aleutian Islands Atka mackerel discard datafrom 2006 to 2014 average 2.75%. http://www.afsc.noaa.gov/REFM/Docs/2015/BSAIatka.pdf. Discards are not considered significant.

- Ecosystem sub element 5. *There are effective measures to mitigate the wider effects of fisheries on the ecosystem.*
  Thisexample is provided not as a means to "assess" or "strictly prescribe" the type of conformance level an assessment effort would assign but instead ***guide with more clarity*** *in terms of how potentially negative elements can be mitigated through effective measures, thus resulting in accurate conformity levels.*

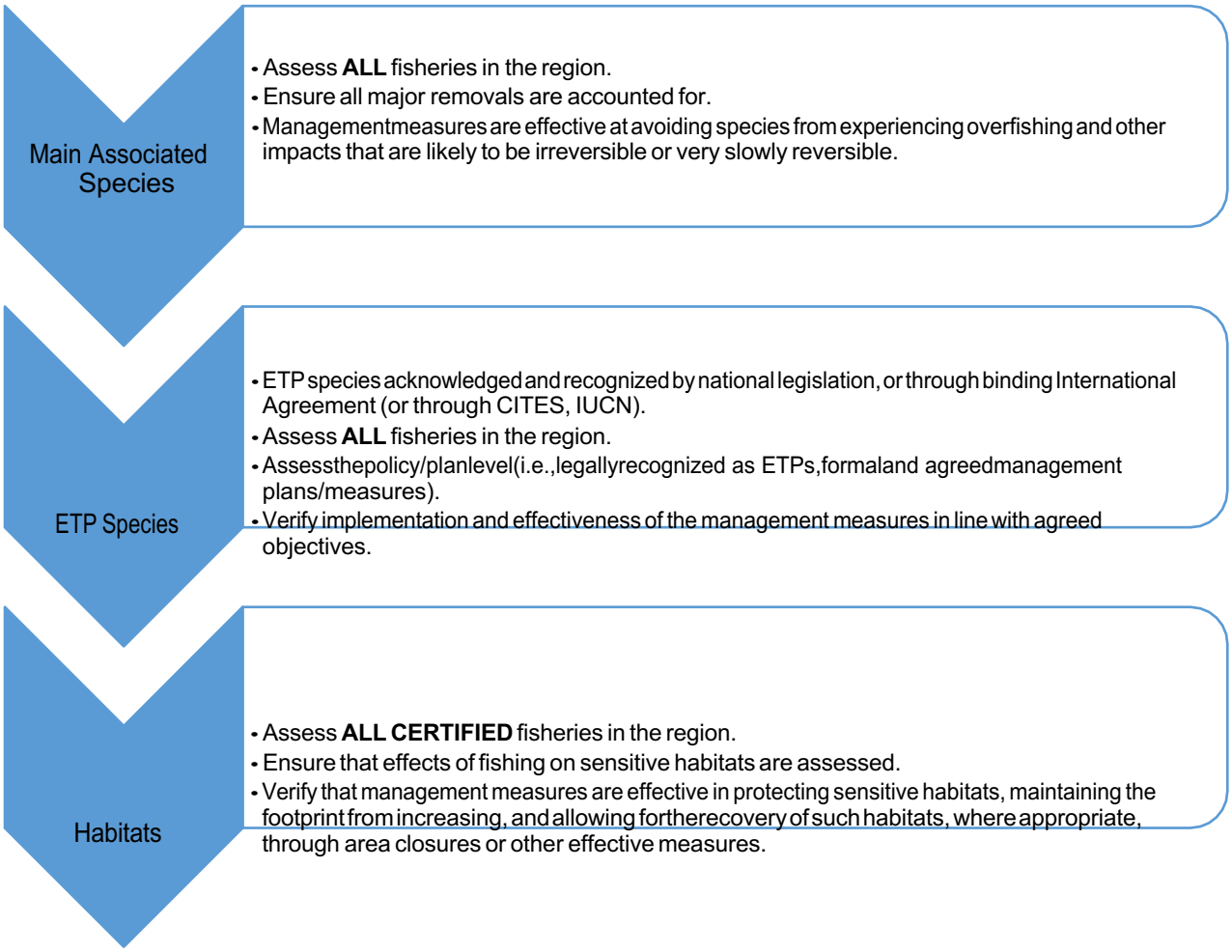
  The levels of bycatch in the Atka mackerel fishery of prohibited species, forage fish, HAPC biota, marine mammals, birds, and other sensitive non-target species is relatively low. Level of sponge and coral bycatch are variable but generally low. The observer programme is capable of reliably accounting for bycatch produced by the Atka Mackerel fishery. Atka mackerel are consumed by a varietyof piscivores,including groundfish(e.g.,Pacificcod,Pacifichalibut,andarrowtooth flounder), marine mammals (e.g., northern fur seals and Steller sea lions), skates, and seabirds (e.g., thick-billedmurres,tuftedpuffins,and short-tailed shearwaters). The AI food webdoes not appear to have been negatively affected by the fishery and extensive management measureshavetaken intoaccountpredatorpreyinteractions.Overall,directedfisherycatch levels for Atka Mackerel appear to be in line with international guidelines (i.e. Lenfest recommendations for low trophic key prey species). Dispersing the fishery in space and time is done through implementation of extensive closures across the Aleutian Islands. Discard in the fisheryare monitored and managed, andconsidered notsignificant. A suitof management measures is in place to effectively mitigate the ecosystem effects of the Atka Mackerel fishery.

- Additional Guidance Ecosystem sub element 5.

  Followingtheprevious ecosystem sub elements, assessment teams shall evaluate management actions that have been implemented to mitigate potential negative effects of the fishery on ecosystems. The procedures in place shall be effective at protecting ecosystem functioning and accounting for species' ecological role. This is achieved through a number of measures including: implementation ofecosystem-wide cumulative catch limits as part of the optimum yield (OY) measure, effective time and area closures to decrease the fisheries on HAPC and other sensitive areasthrough area closures(e.g. StellerSea Lion (SSL) closure, Aleutian Islands Habitat Conservation Area), Prohibited Species Catch Limits as applicable, and other catch accounting measures to ensureall removals by a fisheryareaccountedfor. Management measure shall effectively mitigate the effects of fisheries on the wider ecosystem and ATs shall explicitly account forall the action taken by management organizations to mitigate such effects. It is expectedthat effective management measures will pushthe scale oftheassessment results towards positive conformity levels, and vice versa.

Part 7. Specifications for assessment of cumulative effects of fisheries

The *assessment of cumulative effects* means cumulative effects of fisheries on fisheries. Namely, this assessment looks primarily at the effects of overall removals on associated species bycatch and ETP species interactions (where relevant), and on the habitat footprint when assessing cumulative impacts for habitats (Appendix Figure3).



Appendix Figure 3. *Flow diagram for assessing cumulative effects and how they are applied in a fishery assessment.*

Cumulative impact metrics for associated bycatch species

For bycatch species, the assessment team is required to evaluate cumulative effects of certified fisheries forthe main associated species (80% of total catch, 3–5 years average) and ETP Species.

- The evaluation for main associated species aimsprimarily at establishing whether the overall effects of fishing (from all fisheries in the area) and all significant removals are accounted for, and that the management strategy and relative measures are effective in maintaining the main associated species from experiencing overfishing and other impacts that are likely to be

irreversible or very slowly reversible.

Cumulative impact metrics for Endangered, Threatened, Protected species

ETP species must be assessed for cumulative impacts from all fisheries, starting from the policy/plan level (i.e., legallyrecognized as ETPs, andhavingformalandagreedmanagementplans/measures in place) and thenensuring the implementation of the management measures and evaluating their effectiveness in achieving the objectives of the plan agreed (including, if appropriate and available, any national or international agreement on capping ETP bycatch or interacting with ETP species). The assessment team shall ensure that the agreed measures are implemented and are effective in achieving the management objectives set for the ETP species under assessment.

Cumulative impact metrics for habitats

Cumulativeeffects of fisheries on marine habitats shall be assessed forall certified fisheries. Forexample, the effects of the bottom trawl fishery for Pacific cod in the Bering Sea shall also take into account the effects of the flatfish fisheries in the same region. In the same way, the effects of the benthic longline fishery for halibut shall be considered when assessing the sablefish fishery. Equally as important, when assessing the effects of pot gear on EBS and AI habitats, all certified crab species shall be taken into account. Effects of the fishing gear on sensitive habitats shall be assessed.

For a high conformity score, the overall effects of bottom contact gear from certified fisheries shall be consistent with ahighlikelihood thatthe units of certification are not causing significant, non-reversible harm on essential habitats for the stock under consideration and on habitats that are highly vulnerable to damage by the fishing gear of the unit of certification. The same metrics used for assessing and scoring habitateffects for individual fisheries can be used to assess the overall habitat effects of certified fisheries.