

SOUTH GEORGIA PATAGONIAN TOOTHFISH FISHERY ASSESSMENT AGAINST THE MSC PRINCIPLES AND CRITERIA FOR SUSTAINABLE FISHERIES

SCORING INDICATORS AND GUIDEPOSTS DRAFT FOR CONSULTATION

INTRODUCTION TO SCORING METHODOLOGY

Application of the MSC Principles and Criteria for Sustainable Fishing

The MSC Principles and Criteria provide the overall requirements necessary for certification of a sustainably managed fishery.

The certification methodology adopted by the MSC involves the application and interpretation of the Principles and Criteria to the specific fishery undergoing assessment. This is necessary as the precise assessment of a fishery will vary with the nature of the species, capture method used etc.

Accordingly, the assessment team for the South Georgia Patagonian Toothfish Fishery have developed, from the MSC Principles and Criteria, a structured hierarchy of 'Indicators' and 'Scoring Indicators' in order to carry out the assessment. Indicators represent separate areas of important information (e.g. Indicator 1.A requires a sufficient level of information on the target species and stock, 1.B requires information on the effects of the fishery on the stock and so on). These indicators therefore provide a detailed checklist of factors necessary to meet the MSC Criteria in the same way as the Criteria provide the factors necessary to meet each Principle. Below each indicator, individual 'Scoring Indicators' are identified. It is at this level that the performance of the fishery is measured

Scoring Methodology

At the scale of the Scoring Indicators, performance of a fishery is determined on the basis of compliance with pre-specified scoring guideposts, with a score of 80 representing the level required to comply fully with the MSC requirement (i.e. a "pass"). In order to make the assessment process as clear and transparent as possible, the scoring guideposts are presented in the scoring table (below) and describe the level of performance necessary to achieve 100 (substantially exceeds necessary performance standard) 80 (meets necessary performance standard), and 60 (falls below the necessary performance standard). A score below 60 would represent a level of performance that would normally cause a fishery to automatically fail the assessment.

We now invite comment on these Scoring Indicators and Guideposts. The deadline for receipt of comments is 15 March 2002.

SCORING INDICATORS AND GUIDEPOSTS

SCORING INDICATORS	SCORING GUIDEPOST 60	SCORING GUIDEPOST 80	SCORING GUIDEPOST 100
<p>MSC Principle 1: A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.</p> <p>Intent: The intent of this principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favour of short term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.</p>			
<p>MSC Criteria:</p> <ol style="list-style-type: none"> 1. The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity. Applicability: This criterion is evaluated in the following scoring indicators. 2. Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame. Applicability: Requirements for rebuilding of the target population are not considered necessary. This criterion is not, therefore reflected in the following scoring indicators. 3. Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity. Applicability: This criterion is evaluated in the following scoring indicators. 			
<p>Indicator 1.A. There should be sufficient information on the target species and stock to allow the effects of the fishery on the stock to be evaluated.</p>			
<p>1A.1 Can the species be readily identified?</p>	<p>Poor identification threatens monitoring and increases recording errors of catches to unacceptable levels. Errors threaten reliability of stock assessment.</p>	<p>The target species is unlikely to be confused with any other species.</p>	<p>The species is readily identifiable by fishers and regulators.</p>

1A.2 Is the life history of the species understood?	There are serious gaps in information but the basis of the life history is understood. Information is adequate to support a general population model.	The life history of the species is clearly documented and understood. Information is adequate to support an appropriate population model	The life history of the species is clearly documented and understood including behaviour and ecological interactions
1A.3 Is the geographical range of the target stock known?	An estimate of the geographical range of the target stock is available. A management unit approximating the stock is used with some justification.	A reliable estimate of the geographic range of the target stock is available including seasonal patterns of movement/availability. Scientific research is used to support the stock identification.	The complete geographic range of the stock, including seasonal patterns of movement/availability, is estimated and documented each year. Extensive scientific research is used to justify stock identification.
1A.4 Is there information on fecundity/recruitment and factors causing natural mortality?	There is information available on the fecundity, growth and natural mortality.	Estimates are available of fecundity at size, growth rates and natural mortality.	There is comprehensive and reliable information on the fecundity/recruitment, growth rates and factors causing natural mortality.
1A.5 Is the age and structure of the stock known?	Population structure is based on some sampling and verification such as hard-part rings verified for this species.	Population structure is based on adequate sampling and verification based on hard-part rings verified for this stock. Ageing errors are estimated and included in stock assessment.	Population structure is well estimated with only insignificant errors.
1A.6 Is information collected on the abundance/density of the stock?	Either fishery dependent or fishery independent indices are available on the abundance of the stock biomass.	Fishery dependent and/or fishery independent indices are available on the abundance of the size/age/sex structure of the stock. Uncertainties reduced so as to allow trends to be determined from indices.	Fishery dependent and fishery independent indices are available on the abundance and density of the size/age/sex structure of the stock. Indices are consistent and there is clear evidence that they are proportional to the stock size.

SCORING INDICATORS	SCORING GUIDEPOST 60	SCORING GUIDEPOST 80	SCORING GUIDEPOST 100
Indicator 1B There should be sufficient information on the fishery to allow its effects on the target stock to be evaluated			
1B.1 Is fishery related mortality recorded/ estimated (including landings, discards and incidental mortality)?	Sufficient information is available to allow accurate estimates to be made of landings broken down as required by the population model. Estimates of discards and incidental mortality are available.	Landings are accurately recorded. Discards and incidental mortality are well estimated.	Landings, discards and incidental mortality are accurately recorded.
1B.2 Is fishing effort recorded/ estimated?	Data are available which can be used to estimate fishing effort.	Accurate estimates of fishing effort can be made. The relationship between the fishing effort measure and fishing mortality has been established.	Comprehensive records are kept of fishing effort, recorded at sub-annual intervals at an appropriate degree of spatial resolution.
1B.3 Are fishing methods and gear types known throughout the fishery?	Main fishing methods are known for the fishery.	Main fishing methods are known and information is available on the geographical areas of use.	All fishing methods employed in the fishery are known. In-situ observations are made of fishing practices.
1B.4 Is selectivity known for the fishery?	Main methods and gear types are known and some information is available on selectivity.	Selectivities of gear types are well estimated by size, sex and maturity.	Full selectivities have been accurately estimated for all gears, locations and times of fishing.
1B.5 Are other fisheries in the area that are not subject to certification identified?	There is some information relating to other fisheries in the area that are not subject to certification, although these are not fully identified. These fisheries are accounted for in the stock assessments.	The main fisheries not subject to certification are identified. They are included in the stock assessments.	All fisheries in the area that are not subject to certification are identified and monitored.
Indicator 1C Have appropriate reference levels been developed for the stock?			
1C.1 Are there appropriate limit and precautionary reference points?	Limit and precautionary reference points have been chosen and are justified based on standard international practice.	Limit and precautionary reference points are justified based on stock biology (e.g. a stock-recruitment relationship).	Limit and precautionary reference points are justified based on stock biology and statistical simulations.
1C.2 Do reference points meet acceptable international standards?	Reference points recognise appropriate international standards and are being developed to meet these.	Reference points recognise, and are in line with, acceptable international standards.	Reference points meet or exceed international standards.

SCORING INDICATORS	SCORING GUIDEPOST 60	SCORING GUIDEPOST 80	SCORING GUIDEPOST 100
Indicator 1D Is there a well-defined and effective harvest strategy to manage the target?			
1D.1 Is there a mechanism in place to contain harvest as required?	Mechanisms to reduce harvest exist but do not fully contain harvest, or have not been tested.	Mechanisms are in place to reduce harvest as and when required to maintain, or allow the target stock to return to, productive levels.	Mechanisms are in place to reduce harvest as and when required to maintain (or allow the target stock to return to) productive levels. Measures to demonstrate effectiveness are in place.
1D.2 Are clear, tested decision rules set out?	It can be demonstrated that decision making, though not documented, is logical and appropriate. Rules have not been tested.	Clear decision making rules exist, are fully documented, but have not been fully tested. Decision rules are reconciled with reference points.	Clear, documented and tested decision rules are in place and have been fully reconciled with reference points.
1D.3 Are appropriate management tools specified to implement decisions in terms of input and/or output controls?	Management tools exist to implement decisions of input and/or output controls although these are not developed for the specific fishery, or management tools are not fully developed, but are specifically related to the fishery. Some evidence exists to show that tools can be effective.	Management tools have been specified to implement decisions of input and/or output controls. These are generic although some attempt has been made to relate them to the specific fishery OR tools are lacking in some details but are specifically related to the fishery. Evidence exists to show clearly that tools are effective.	Management tools, appropriate to the species and fishery, have been specified to implement decisions of input and/or output controls. Evidence exists to show clearly that tools fully achieve their objectives.
Indicator 1E Is there a robust assessment of stocks?			
1E.1 Are assessment models used?	Robust assessment models are used. These are generic and do not account for specific characteristics of either the biology of the species or the nature of the fishery.	Assessment models are used. Major criteria are related to the species and/or the fishery, but there are some areas of the assessment that are generic.	Assessment models are used and capture all major features appropriate to the biology of the species and the nature of the fishery.
1E.2 Does the assessment take into account major uncertainties in data and have assumptions been evaluated?	Major uncertainties are identified. Some attempt has been made to account for these in the assessment.	The assessment takes into account major uncertainties in the data and functional relationships. The most important assumptions have been evaluated.	The assessment takes into account all significant uncertainties in the data, functional relationships and evaluates the assumptions.
1E.3 Are uncertainties and assumptions reflected in management advice?	Major uncertainties are recognised and are reported in management advice.	Major uncertainties and assumptions are taken into account in management advice through the decision rules.	All uncertainties and assumptions are taken into account and reflected in the management advice.
1E.4 Does the assessment evaluate current stock status relative to reference points?	Some attempt is made to estimate the stock status relative to reference points	The assessment makes an approximated evaluation of the stock status relative to the reference points.	The assessment makes a reliable probabilistic evaluation of the stock status relative to the reference points.
1E.5 Does the assessment include the consequences of current harvest strategies?	The assessment makes a crude approximation of the consequences of current harvest strategies.	The assessment makes a robust approximation of the consequences of current harvest strategies.	The assessment includes the consequences of current harvest strategies and forecasts future consequences of these.

SCORING INDICATORS	SCORING GUIDEPOST 60	SCORING GUIDEPOST 80	SCORING GUIDEPOST 100
Indicator 1F Is the stock(s) at appropriate precautionary reference level(s)?			
1F.1 Is the stock(s) at or above reference levels?	The stock is close to the limit reference levels.	The stock is above the precautionary reference levels	The stock is significantly and consistently above appropriate reference levels.
1F.2 If the stock is below the precautionary reference point, is rebuilding specified in the decision rule being implemented?	Rebuilding measures exist and are fully implemented. Measures have not been tested.	Appropriate rebuilding measures are being implemented. Measures have been tested and can be shown to be rebuilding the stock.	Additional measures are being implemented to prevent problems in the future.

SCORING INDICATORS	SCORING GUIDEPOST 60	SCORING GUIDEPOST 80	SCORING GUIDEPOST 100
<p>MSC Principle 2: <i>Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends</i></p>			
<p>Intent: The intent of this principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.</p>			
<p>MSC Criteria:</p> <ol style="list-style-type: none"> <li data-bbox="88 477 1961 535">1. The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes. Applicability: This criterion is evaluated in the following scoring indicators. <li data-bbox="88 565 1961 646">2. The fishery is conducted in a manner that does not threaten biological diversity at the genetic, species or population levels and avoids or minimises mortality of, or injuries to endangered, threatened or protected species. Applicability: This criterion is evaluated in the following scoring indicators. <li data-bbox="88 675 1961 792">3. Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields. Applicability: Requirements for rebuilding of the target Patagonian toothfish population are not considered necessary. This criterion is not, therefore reflected in the following scoring indicators. 			

Indicator 2A Is there adequate determination of ecosystem factors relevant to the geographical scale and life-history strategy of the target species?			
2A.1 Are the nature and distribution of habitats relevant to the fishing operations known?	Some information exists but may not be comprehensive or up to date. The distribution of fishing operations is mapped.	Nature and distribution of all main habitats are known in moderate detail. Information is recent. The distribution of fishing operations is monitored.	The nature and the distribution of all habitats relevant to the fishing operations are known in detail. Information is recent.
2A.2 Is information available on non-target species affected by the fishery?	The main non-target species have been identified.	Information is available on the main non-target species affected by the fishery including their distribution and/or ecology.	Information is available on all non-target species affected by the fishery including the distribution and ecology.
2A.3 Is information available on the position and importance of the target species within the food web?	Key food/prey items are known.	Information is available on the position and general importance of target species in the environment at key life stages.	Quantitative information is available on the position and importance of the target species within the food web at key life stages.
2A.4 Is there information on the potential for the ecosystem to recover from fishery related impacts?	Key elements of the functioning of the ecosystem, relevant to the fishery, are identified.	The main elements of the functioning of the ecosystem, relevant to the fishery, have been documented and are understood.	Detailed information is available on the potential for affected elements of the ecosystem to recover from fishery related impacts.
Indicator 2B Are general risk factors adequately determined?			
2B.1 Is information available on the nature and extent of the by-catch (capture of non-target species)?	Qualitative information is available on significant by-catch species.	Quantitative information is available on significant by-catch.	Accurate records are kept on the nature and extent of all by-catch species including species size and sex composition.
2B.2 Is information available on the extent of discard (the proportion of the catch not landed)?	Information is available of the extent of discarding, including a species list.	Information is available to allow estimates of discard to be calculated and interpreted.	Accurate information is available on the extent of all discards, and consequences of these., or the entire catch is landed.
2B.3 Is there information on any unobserved fishing mortality?	Areas of potential unobserved fishing mortality are identified but no further information is available.	Information from existing work has allowed estimates of unobserved fishing mortality to be made.	Research has been carried out on unobserved fishing mortality allowing accurate estimates to be made (or it is known that significant unobserved mortality does not occur).
2B.4 Are the effects of supply and use of bait known?	Types of bait, extent of use and sources of supply are known.	There is adequate knowledge of the use of bait including sources and amounts and there is sufficient information to indicate that collection of bait does not cause significant conservation problems.	All significant impacts of the supply and use of bait are known.
2B.5 Are the potential and significance of introduced/relocated species known?	There is recognition of potential sources of introduced/relocated species.	Potential routes and significance of introduced/relocated species directly related to the fishery are known	Potential routes and significance of introduced/relocated species directly related to the fishery are known and monitored. Records are kept.

SCORING INDICATORS	SCORING GUIDEPOST 60	SCORING GUIDEPOST 80	SCORING GUIDEPOST 100
Indicator 2C Is the fishery conducted in a manner which does not have unacceptable impacts on recognised protected, endangered or threatened species?			
2C.1 Is there information on the presence and populations of protected species?	There is a program in place to identify protected, threatened and endangered species directly related to the fishery.	Key protected, threatened and endangered species directly related to the fishery have been identified.	There is knowledge of all populations of protected species directly or indirectly related to the fishery including an assessment of temporal variability. The type and distribution of critical habitats have been identified.
2C.2 Are interactions of the fishery with such species adequately determined?	The main interactions directly related to the fishery are known.	Quantitative estimates are made of the effects of interactions directly related to the fishery.	Reliable quantitative estimates are made of the interactions of all populations directly related to the fishery, and qualitative information is available on indirect impacts.
2C.3 Do interactions pose an unacceptable risk to such species?	Known effects are within acceptable limits of national and international legislative requirements.	Critical interactions are well estimated and do not threaten protected species.	It is known that the direct and indirect effects of fishing on threatened and endangered species are within acceptable limits.
Indicator 2D Is there adequate knowledge of the effects of gear-use on the receiving ecosystem and extent and type of gear losses?			
2D.1 Is there adequate knowledge of the physical impacts on the habitat due to use of gear?	Main impacts of gear use on the habitat are identified including extent and location of use. Habitat perturbations appear sustainable.	All impacts of gear use on the habitat are identified including extent and location of use and estimates of habitat recovery times.	The physical impacts on the habitat due to use of gear have been studied and quantified, including details of any irreversible changes.
2D.2 Is any gear lost during fishing operations?	Some recording of gear losses takes place.	There is knowledge of the type, quantity and location of gear lost during fishing operations. Estimates made show that losses do not cause unacceptable effects on the ecosystem.	There is detailed knowledge of the type, quantity and location of gear types lost during fishing operations. The impact of gear loss on target and non-target species has been measured and shown to have negligible effects on habitats, ecosystems or species of concern.
2D.3 Is there any information on extent and significance of ghost fishing?	The effects of ghost fishing has been estimated in some way, for example from experiments.	Records of ghost fishing exists and estimates are made of the extent and significance of the impacts to target and non-target species.	Records are kept of the extent of ghost fishing on target and non-target species. Estimates of impacts are made.

SCORING INDICATORS	SCORING GUIDEPOST 60	SCORING GUIDEPOST 80	SCORING GUIDEPOST 100
Indicator 2E Do assessments of impacts associated with the fishery including the significance and risk of each impact, show no unacceptable impacts on the ecosystem structure and/or function, on habitats or on the populations of associated species?			
2E.1 Have all the significant effects of the fishery on the ecosystem been identified?	Main impacts of the fishery on the ecosystem are known from existing information.	There is a comprehensive evaluation of the effects of the fishery on the ecosystem based on existing information.	The effects of the fishery on the ecosystem have been identified by appropriate comparative and/or experimental studies.
2E.2 Does the removal of target stocks have unacceptable impacts on ecosystem structure and function?	The removal of target stocks may have unacceptable impacts on ecological systems (applying the precautionary approach where necessary). A program is in development to reduce these to acceptable, defined limits.	Some information is available on consequences of current levels of removal of target species. These suggest no unacceptable impacts of the fishery on ecological systems within major fishing areas.	The ecological consequences of current levels of removal of target stocks has been quantified and documented to be within acceptable, pre-determined, limits.
2E.3 Does the removal of non-target stocks have unacceptable impacts on ecosystem structure and function?	The removal of non-target stocks may have unacceptable impacts on ecological systems (applying the precautionary approach where necessary). A program is in development to reduce these to acceptable, defined limits.	Some information is available on consequences of current levels of removal of non-target species. These suggest no unacceptable impacts of the fishery on ecological systems within major fishing areas.	The ecological consequences of current levels of removal of non-target stocks has been quantified and documented to be within acceptable, pre-determined, limits.
2E.4 Does the fishery have unacceptable impacts on habitat structure?	There is no evidence that the fishery is having unacceptable impacts, although the issue has not been directly studied.	No unacceptable impacts of the fishery on habitat structure within major fishing areas have been demonstrated.	Effects on habitat structure are documented and are within acceptable tested/justified limits.
2E.5 Is associated biological diversity and productivity affected to unacceptable levels?	There is no evidence that the fishery is having unacceptable impacts, although the issue has not been directly studied.	The effects of the fishery on biological diversity and productivity have been considered and no unacceptable impacts have been found.	The effects of the fishery on biological diversity and productivity have been quantified and are within acceptable tested/justified limits

SCORING INDICATORS	SCORING GUIDEPOST 60	SCORING GUIDEPOST 80	SCORING GUIDEPOST 100
Indicator 2F Are strategies developed within the fisheries management system to address and restrain any significant impacts of the fishery on the ecosystem?			
2F.1 Are levels of acceptable impact determined and reviewed?	There is sufficient information to determine acceptable impacts for main target and non-target species and habitats.	Levels of acceptable impacts (e.g biological reference points) for key aspects of the ecosystem within main fishing areas have been estimated and are regularly reviewed.	Levels of acceptable impact for key populations (such as of indicator species) and habitats have been estimated and are subject to frequent review.
2F.2 Are management objectives set in terms of impact identification and avoidance/reduction?	Limited management systems exist in terms of impact identification and avoidance/reduction.	Management objectives are set to detect and reduce impacts. These are designed to adequately protect key aspects of the ecosystem within main fishing areas.	Tested management objectives are set to detect and reduce impacts. These are designed to adequately protect ecosystems, habitats and populations of target and non-target species.
2F.3 Are management measures in place to modify fishery practices in light of the identification of unacceptable impacts?	A mechanism exists for the modification of fishing practices in light of the identification of unacceptable impacts, but the effectiveness of this mechanism are not fully demonstrated.	Effective management measures are in place to modify fishery practices in light of the identification of unacceptable impacts.	Monitoring programs are in place within the management system to allow modification of fishery practices in light of the identification of unacceptable impacts. Objectives and limits for environmental change are used to guide operational practices. It is demonstrated that these are effective.

SCORING INDICATORS	SCORING GUIDEPOST 60	SCORING GUIDEPOST 80	SCORING GUIDEPOST 100
--------------------	----------------------	----------------------	-----------------------

Principle 3: *The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable*

Intent: The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

MSC Criteria:

A. Management System Criteria:

1. The fishery shall not be conducted under a controversial unilateral exemption to an international agreement.

The management system shall:

2. demonstrate clear long-term objectives consistent with MSC Principles and Criteria and contain a consultative process that is transparent and involves all interested and affected parties so as to consider all relevant information, including local knowledge. The impact of fishery management decisions on all those who depend on the fishery for their livelihoods, including, but not confined to subsistence, artisanal, and fishing-dependent communities shall be addressed as part of this process;
3. be appropriate to the cultural context, scale and intensity of the fishery – reflecting specific objectives, incorporating operational criteria, containing procedures for implementation and a process for monitoring and evaluating performance and acting on findings;
4. observe the legal and customary rights and long term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability;
5. incorporates an appropriate mechanism for the resolution of disputes arising within the system;
6. provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing;
7. act in a timely and adaptive fashion on the basis of the best available information using a precautionary approach particularly when dealing with scientific uncertainty;
8. incorporate a research plan – appropriate to the scale and intensity of the fishery – that addresses the information needs of management and provides for the dissemination of research results to all interested parties in a timely fashion;
9. require that assessments of the biological status of the resource and impacts of the fishery have been and are periodically conducted;

MSC Criteria (Continued):

10. specify measures and strategies that demonstrably control the degree of exploitation of the resource, including, but not limited to:
 - a) setting catch levels that will maintain the target population and ecological community's high productivity relative to its potential productivity, and account for the non-target species (or size, age, sex) captured and landed in association with, or as a consequence of, fishing for target species;
 - b) identifying appropriate fishing methods that minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
 - c) providing for the recovery and rebuilding of depleted fish populations to specified levels within specified time frames;
 - d) mechanisms in place to limit or close fisheries when designated catch limits are reached;
 - e) establishing no-take zones where appropriate;
11. contains appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event that they are.

B. Operational Criteria

Fishing operation shall:

12. make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimise mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive;
13. implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
14. not use destructive fishing practices such as fishing with poisons or explosives;
15. minimise operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.;
16. be conducted in compliance with the fishery management system and all legal and administrative requirements; and
17. assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.

Applicability: Each of the above criteria is evaluated in the following scoring indicators

Indicator 3A Does a management system with clear lines of responsibility exist?			
3A.1 Are organisations with management responsibility clearly defined including areas of responsibility and interactions?	Organisations with management responsibility are known. Responsibilities and interactions are to be determined.	Organisations with management responsibility have been defined including key areas of responsibility and interaction.	Organisations with management responsibility are clearly defined including all areas of responsibility and interaction.
3A.2 Does the management system contain clear short and long-term objectives?	Short and long-term resource and environment objectives are implicit within the management system.	The management system contains short and long-term resource and environment objectives.	The management system contains clear short and long-term resource and environment objectives that can be measured by performance indicators.
3A.3 Do operational procedures exist for meeting objectives?	Operational procedures exist which are applied to the meeting of objectives.	Transparent operational procedures are applied to the meeting of objectives. These procedures can be shown to support the objectives.	Operational procedures are transparent and clearly applied. There is a feedback mechanism testing effective application.
3A.4 Are there procedures for measuring performance relative to the objectives?	Operational procedures exist which can be used to measure performance relative to the objectives.	There are procedures used for measuring performance relative to the objectives.	Tested procedures are used for regular measurement of performance relative to the objectives.
3A.5 Do objectives and operational procedures follow the precautionary approach?	Some objectives and procedures implement a precautionary approach.	Key objectives and procedures explicitly implement a precautionary approach.	All objectives and procedures explicitly implement a precautionary approach.
3A.6 Does the system include a consultative process including affected parties?	The system includes a consultative process including main stakeholders within the fishery, some stakeholders are excluded.	The system includes a consultative process including all key stakeholders.	The system includes a consultative process including all affected stakeholders.
3A.7 Is there an appropriate mechanism for the resolution of disputes within the system?	A program is being developed to allow for resolution of disputes within the system, but has not been tested.	There is an appropriate mechanism for the resolution of disputes within the system.	There is an appropriate and tested mechanism for the resolution of disputes within the system.

SCORING INDICATORS	SCORING GUIDEPOST 60	SCORING GUIDEPOST 80	SCORING GUIDEPOST 100
Indicator 3B Does the management system have a clear legal basis?			
3B.1 Is the fishery consistent with International Conventions and Agreements?	An evaluation is being undertaken to show compliance with relevant international agreements. There is no evidence that the fishery is not consistent with agreements.	An evaluation has been undertaken and fishing appears to comply with international agreements.	An evaluation has been undertaken which clearly shows that the management system is compliant with all relevant international agreements.
3B.2 Is the fishery consistent with national legislation?	An evaluation is being undertaken to show compliance with relevant national agreements. There is no evidence that the fishery is not consistent with national legislation.	An evaluation has been undertaken and fishing appears to comply with national legislation.	An evaluation has been undertaken which clearly shows that the management system is compliant with all relevant national legislation.
3B.3 Does the system observe the legal and customary rights of people dependent upon fishing?	The customary and legal rights of the people dependent upon fishing are known and no major conflicts have been recorded.	The system observes the legal and customary rights of people dependent upon fishing but does not necessarily have a formal codified system.	The system observes all legal and customary rights of people dependent upon fishing under a formal codified system.
3B.4 Are fishers aware of legal requirements?	Fishers are aware of some, but not all, requirements.	Fishers are aware of legal requirements upon them and are kept up to date with new developments.	All fishers are aware of legal requirements. There is an effective code of conduct, incorporating legal requirements, that is fully supported by the fishers.
Indicator 3C Does the management system operate in a manner appropriate to the objectives of the fishery?			
3C.1 Does the system include subsidies that contribute to unsustainable fishing?	A number of subsidies exist that contribute to unsustainable fishing. These are short-term and are in the process of being removed.	The system includes no subsidies that contribute to unsustainable fishing.	The system is not subsidised to any extent.
3C.2 Does the system include economic/social incentives that contribute to sustainable fishing?	A program is being developed to promote sustainable fishing practices.	The system has some economic and social incentives that contribute to sustainable fishing.	The system has established economic and social incentives that contribute to sustainable fishing. No subsidies are offered for purchase of vessels or vessels targeting fully exploited or depleted resources (by FAO definitions)
3C.3 Is the system consistent with the cultural context, scale and intensity of the fishery?	Inconsistencies arise in some key areas but a programme is in place to address these.	The system is consistent with key elements of the cultural context, scale and intensity of the fishery.	The system is entirely consistent with the cultural context, scale and intensity of the fishery.

SCORING INDICATORS	SCORING GUIDEPOST 60	SCORING GUIDEPOST 80	SCORING GUIDEPOST 100
Indicator 3D Does the management system include measures to achieve objectives for the target stock?			
3D.1 Are the resource and effects of the fishery monitored?	A monitoring programme is in place which addresses some aspects of resource and effects and which can be extended.	A monitoring programme is in place which addresses all key aspects of resource and effects at appropriate intervals and results are recorded.	The resource and effects of the fishery are closely monitored over appropriate geographical areas and time periods. Full records are kept of monitoring results and these are made available to relevant research and management bodies.
3D.2 Are results evaluated against precautionary target and limit reference points?	Target, precautionary and limit reference points exist and some level of evaluation is possible.	Results of monitoring are regularly interpreted in relation to precautionary, target and limit reference points	Results of monitoring are quantitatively evaluated against precautionary, target and limit reference points on a regular basis.
3D.3 Do procedures exist for reductions in harvest in light of monitoring results.	Practical procedures exist to reduce harvest. Programmes to link these with monitoring results are underway.	Practical procedures exist to reduce harvest in the light of monitoring results and provide for stock recovery to specified levels.	Practical procedures exist to reduce harvest in light of monitoring results and provide for stock recovery to specified levels within specified time frames.

SCORING INDICATORS	SCORING GUIDEPOST 60	SCORING GUIDEPOST 80	SCORING GUIDEPOST 100
Indicator 3E Does the management system include measures to achieve objectives for the affected ecosystem?			
3E.1 Are measures in place to address (avoid or minimise) significant environmental impacts?	Significant environmental impacts are known and measures are being applied to reduce key impacts.	Environmental impacts are known. Measures are being applied to minimise all significant ones and there is evidence that the measures are working.	Measures are in place to avoid all significant environmental impacts and are subject to monitoring and periodic review.
3E.2 Do fishing operations implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning or nursery areas?	Fishing operations use measures that significantly reduce major impacts on habitat, especially in critical or sensitive zones such as spawning or nursery areas.	There is evidence that fishing operations are effective in avoiding significant adverse effects on the environment, especially in critical or sensitive zones such as spawning or nursery areas.	There is direct evidence that fishing operations implement appropriate methods to avoid significant adverse impacts on all habitats.
3E.3 Are no take zones appropriate and, if so, are these established?	Suitability of no take zones has been reviewed against objective biological criteria but, if appropriate, there are no plans to implement the results.	Suitability of no take zones has been reviewed and these have been or are currently being implemented if and where appropriate.	No take zones are established if and where appropriate and, if implemented, the consequences are being monitored.
3E.4 Do measures include avoidance of impacts on non-target species and inadvertent impacts upon target species?	Measures have been implemented that are intended to reduce the major impacts on non target species and inadvertent impacts on target species but their effectiveness is not known.	Measures have been implemented to reduce the major impacts on non target species and inadvertent impacts on target species and there is some evidence that they are having the desired effect.	Measures have been implemented to reduce the major impacts on non target species and inadvertent impacts on target species, and their effectiveness is clearly demonstrated.
3E.5 Do measures exist to reduce operational waste	Measures are in place to reduce sources of operational waste that are known to have detrimental environmental consequences, but further reductions may be possible.	Measures are in place to reduce all sources of operational waste that are known to have detrimental environmental consequences, and there is evidence they are effective.	Measures are in place to reduce all sources of operational waste that are known to have detrimental environmental consequences, and there is evidence they are effective and these measures are supported by the fishers.
3E.6 Does the fishery employ destructive fishing practices?	The fishery does not allow any destructive fishing practices but there is concern that enforcement is inadequate to defer such practices effectively.	The fishery does not employ any destructive fishing practices and enforcement is considered sufficient to prevent their use.	The fishery does not employ any destructive fishing practices. There is a code of conduct for responsible fishing that is fully supported by fishers.

SCORING INDICATORS	SCORING GUIDEPOST 60	SCORING GUIDEPOST 80	SCORING GUIDEPOST 100
Indicator 3F Does a research plan exist in line with the management system to address information needs?			
3F.1 Have key research areas requiring further information been identified?	Some major areas requiring further research have been identified.	Key areas requiring further research have been identified.	A comprehensive review of information requirements has been undertaken.
3F.2 Is research planned/undertaken to meet the specific requirements of the management plan?	Research is planned for highest priority information needs but significant gaps remain.	Research is planned and undertaken to provide necessary scientific support to the plan . There are demonstrable resources to allow implementation of the programme.	There is an ongoing, funded, comprehensive and balanced research programme, linking research to the management plan.
3F.3 Is relevant research carried out by other organisations and is this taken into consideration?	The management system is aware of research carried out by other organisations. These are not necessarily taken into consideration.	Appropriate research carried out by other organisations is taken into consideration, although there is not necessarily any proactive co-ordination between organisations.	Relevant research carried out by other organisations is taken into account for management considerations. This research is often co-ordinated with existing research plans of the management system.
Indicator 3G Are control measures in place to ensure the management system is effectively implemented?			
3G.1 Are information, instruction and/or training provided to fishery operatives in the aims and methods of the management system?	Mechanisms exist for the dissemination of information, instruction and training of fishery operatives. These are not necessarily implemented in terms of the aims and methods of the management system.	Information, instruction and training are provided to fishery operatives in the aims and methods of the management system allowing effective management of the system.	Information, instruction and training are provided to fishery operatives in the aims and methods of the management system allowing effective management of the fishery and operatives demonstrate comprehensive knowledge of this information.
3G.2 Is surveillance and monitoring in place to ensure that requirements of the management system are complied with?	An enforcement system has been implemented, however, its effectiveness and/or compliance pose a risk of failing to achieve conservation objectives.	An effective enforcement system has been implemented and there is an appropriate degree of control and compliance.	An effective enforcement system has been implemented and there is a high degree of control and compliance.
3G.3 Can corrective actions be applied in the event of non-compliance?	Mechanisms exist or are being developed which can be implemented or applied to deal with non-compliance.	There are set measures that can be applied in the event of non-compliance although these may not be included in a formal or codified system.	Agreed and tested corrective actions can be applied in the event of non-compliance.
3G.4 Do fishery operatives assist in the collection of catch, discard and other relevant data?	Fishery operatives are occasionally involved in the collection of catch, discard and other information.	Fishery operatives are regularly involved in the collection and recording of catch, discard and other information.	Fishery operatives assist significantly in the collection and recording of catch, discard and other information.
3G.5 Is the management system subject to internal review?	There are mechanisms in place to allow for internal review.	The management system is subject to regular internal review.	The management system is subject to regular and frequent internal review.
3G.6 Is the management system subject to external review?	There are mechanisms in place to allow for external review.	The management system is subject to regular external review.	The management system is subject to regular and frequent external review.