

MSC ASSESSMENT

South Australia Lakes and Coorong Fishery

Final Performance Indicators and Scoring Guideposts

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Introduction

The Lakes and Coorong fisheries are small-scale, community-based fisheries in South Australia. The “Performance Indicators” in the following tables are specifically worded so that they articulate metrics that the assessment team believes reflect the performance measures appropriate to a small-scale mixed species estuarine fishery.

MSC has defined a set Principles and Criteria for Sustainable Fishing which is to be used as a standard for its fisheries evaluation and certification process. Recognizing the diversity of fisheries across the world, the MSC derived an evaluation methodology that would maintain the intent and rigor of its Principles and Criteria but allow enough flexibility in the application of the standard to permit scientists to make sound judgments about the sustainability of any given fishery regardless of differences in species composition, geographic location, oceanographic conditions, or fishing methods.

The flexibility in the MSC evaluation methodology is achieved in two ways: first, the scientists conducting an evaluation translate the MSC Principles and Criteria into a set of sub-criteria and performance indicators to provide appropriate and specific measures of performance for the fishery or fisheries being assessed. In addition, a set of "scoring guideposts" is provided to describe the basis by which fisheries will be measured against the indicators. Once the sub-criteria, indicators, and scoring guideposts are finalized, the evaluation team of scientists prioritizes and weights the sub-criteria and indicators to indicate the importance of each of the factors to the overall sustainability of the fishery or fisheries.

Sets of subcriteria and performance indicators are provided under each of the three MSC Principles. Subcriteria are not used as specific measures of performance; they are more refined categories of inquiry under MSC Principles and Criteria. A fishery is only measured against individual performance indicators. Under the MSC assessment protocols, each indicator must receive a score between 0 and 100. Therefore, scoring guideposts are provided to illustrate what the assessment team will be looking for in assigning scores to an indicator.

Scoring guideposts labeled as ‘100’ indicate the best performance achievable for an indicator. This is the highest mark any fishery could be expected to receive. The ‘80’ scoring guidepost references the level of acceptable performance for an indicator; whereas, the ‘60’ scoring guidepost indicates the minimal threshold allowable in an MSC evaluation. Indicator scores between 80 and 100 do not require any further action. A score between 60 and 80 for an indicator, points out that the evaluating scientists identified a minor deficiency that needs corrective action. An indicator score of less than 60 indicates a major deficiency in the fishery that needs corrective action. **It is very important to keep in mind that the scoring guideposts used to rate each indicator are meant to be used in a hierarchical fashion – in other words to achieve a score of 80 the fishery must not only meet the scoring guideposts for the 80 level but also the scoring indicators for the 60 level score as well.**

A fishery is considered to pass the MSC evaluation process and recommended for certification when it receives a weighted average score of 80 or above on each of the three MSC Principles. For fisheries where the weighted average score of each MSC Principle is 80 or above, but specific indicators achieve a score between 60 and 80, the fishery is considered to have passed the MSC evaluation process but certification can only be awarded if the applicant fishery agrees in writing to correct the identified deficiencies specified by the evaluation team. In fisheries where given indicators score 60 or below, a fishery cannot pass the evaluation process and cannot be awarded certification until the major deficiency is corrected to the satisfaction of the evaluation team.

All sub-criteria and indicators are also weighted indicating their relative importance in setting the overall scores for the fishery. The weighting process will proceed after the evaluation team has received public comments on this draft and been able to incorporate the comments to create a final set of sub-criteria, indicators, and scoring guideposts for use in the evaluation process.

The performance indicators and scoring guidelines have been developed to evaluate the mixed species fishery as a whole. As a result, the fishery will be scored in total, meaning one score per indicator under MSC Principles 2 and 3. However, the MSC requires that each stock fished be able to be shown to meet the performance requirements of the MSC. Therefore, each of the 4 species being considered under the mixed-species fishery will be scored individually.

To facilitate the correct interpretation of the evaluation components drafted, we have also provided definitions (see Definitions section below) for most of the important terms commonly associated with the management of fisheries. These terms are used to define the fisheries being evaluated, the evaluation sub-criteria and indicators, and the scoring guideposts. These definitions are similar to those used in the evaluation of other fisheries under the MSC system (i.e. salmon, halibut, black cod).

Definitions

Managers and biologist use a wide variety of terms to describe the groups of fish they manage for specific fisheries. For the purpose of this evaluation we will use the following terms and definitions:

Bycatch – the harvest of non-target species or non-target stocks.

Harvest – those fish or other species that are caught and killed during a fishery or die as a direct result of fishing activity.

Limit Reference Point (LRP) – indicates the state of a fishery and/or a resource, which is not considered desirable. Fishery harvests should be stopped before reaching it. If a LRP is inadvertently reached, management action should severely curtail or stop fishery development, as appropriate, and corrective action should be taken. Stock rehabilitation programs should consider an LRP as a very minimum rebuilding target to be reached before the rebuilding measures are relaxed or the fishery is re-opened.

Majority – this could be a simple majority (e.g. >50% of the stocks in a stock management unit) or a numerical majority (e.g. >50% of the fish in a stock management unit or scientists in a region), where the management agency has provided acceptable rationale for the definition used in their submission for each indicator.

Non-target species – species that are not the focus of the fishery but are caught in a fishery that is attempting to harvest other species.

Precautionary approach – A set of measures and actions, including future courses of action, which ensures prudent foresight, reduces or avoids risk to the resources, the environment, and the people, to the extent possible, taking explicitly into account existing uncertainties and the potential consequences of being wrong.

Productivity, related to ecological community or the ecosystem – the rate of increase in biomass per unit area per unit time.

Reference points – A (management) reference point is an estimated value derived from an agreed scientific procedure and an agreed model to which corresponds a state of the resource and of the fishery and which can be used as a guide for fisheries management.

Risk – the possibility of suffering harm or loss; danger. A factor, thing, element, or course involving uncertain danger, a hazard. In decision theory “the degree of probability of loss. A statistical measure representing an average amount of opportunity loss.” This terminology is used “when large amounts of information are available on which to base estimates of likelihood, so that accurate statistical probabilities can be formulated”

Risk analysis – Any analysis of unknown chance events for purposes of effecting or evaluating decisions in terms of possible penalties and benefits attending these events. A method for generating different probability distributions with accompanying cost and benefits that may attend different courses of action. Generally uses computer simulations.

Stock – meaning a group of fish defined by its species, genetic identity, or reproductive separation.

Stock management unit – meaning the stock or group of stocks that are treated as a single unit when setting management goals or making fisheries management decisions.

Target Reference Point (TRP) – corresponds to the state of a fishery and/or a resource, which is considered desirable. Management action, whether during a fishery development or stock rebuilding process, should aim at maintaining the fishery system at its level.

Target species – the species that a specific fishery is attempting to harvest.

Target stocks – specific stocks or stock management units that a specific fishery is attempting to harvest.

Uncertainty – The condition of being uncertain. Doubt. Something uncertain. In statistics, the estimated amount or percentage by which an observed or calculated value may differ from the true value. The incompleteness of knowledge about the states or processes in nature.

(Adapted from FAO, 1995 The Precautionary Approach To Fisheries and its Implications for Fishery Research, Technology and Management: an updated review by S.M. Garcia, Fishery Resources Division, FAO Fisheries Department.)

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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.

Criterion 1.1 (MSC Criterion 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.

Intent: There are effective harvest strategies that control the level of exploitation of each target stock such that it is sustained at an appropriate level of productivity. To be assured of this, it is essential that (1) the stock has been identified and that there is sufficient knowledge of the biology of the species and its abundance to be able to assess the impact of fishing, (2) the fishery is well monitored such that the impact of fishing on the target stock is known, and (3) effective strategies to manage the fishery have been established and are highly likely to ensure that the target population is sustained at a level that is considered appropriate to maintain its high productivity, and that of its associated ecological community, relative to its potential productivity. Note that the direct ecological impact of the fishery on other fauna and on the environment is considered under MSC Criterion 2.

SC 1.1.1 There is adequate knowledge about each target stock.

This sub-criterion is intended to assess whether information about the stock and the biology of the species is adequate and is considered by fishery managers when determining the appropriate level of exploitation that may be permitted if the stock is to be sustained. Indices of abundance and other indicators of stock status should reflect available knowledge of the biology of the species, the size and age composition of catches taken from the target stock, and data on catches, effort and catch per unit of effort collected from the different fishing sectors or fisheries that exploit that stock.

Indicator 1.1.1.1 There is adequate knowledge of the identity of each target stock.

Scoring Guidepost 60

The species can be reliably identified. The distribution of the target species is broadly known. Fisheries or fishing sectors that exploit the target species have been identified.

Scoring Guidepost 80

Appropriate management units, consistent with broad qualitative knowledge of the distribution of each stock, have been defined and are applied when managing the fishery

for that target species. Catches by each fishing sector or fishery that exploits the target species can be broadly attributed to the specific management unit from which they were taken.

Scoring Guidepost 100

Management units are consistent with a broad understanding of stock identity, based on genetic and/or other studies.

Indicator 1.1.1.2 There is knowledge of the life history and biology of the species.

Scoring Guidepost 60

There are serious gaps in information but the basis of the life history is understood adequately to support a rudimentary evaluation of the fishery.

For example: The life cycle of the species is broadly known from other fisheries of the same or similar species. Broad details of the population biology of this species, i.e. its growth, age/size at maturity and natural mortality are drawn from the scientific literature, FishBase, or empirical studies.

Scoring Guidepost 80

The life history of the species is clearly documented and understood well enough to support a high degree of confidence in the evaluation of the fishery.

For example: A qualitative description of the life cycle of the target stock is available for the fishery. Approximate growth curves have been determined, although these may be based on an unvalidated ageing method. Spawning periods have been established, and the relationships between the proportion of fish that are mature and body size and age have been determined. There is a sound understanding of the spatial distribution of the various size groups.

Scoring Guidepost 100

All aspects of the life history of the species are clearly documented and understood so as to support a very high degree of confidence in the evaluation of the fishery.

For example: This might require the above plus a method for ageing individuals that has been validated and growth curves have been derived that are based on validated ages. The range of feasible values of the instantaneous rate of natural mortality, and a point estimate of this parameter, has been estimated.

**Indicator 1.1.1.3 There is information to measure trends in abundance of stocks.
Scoring**

Scoring Guidepost 60

An index of abundance is available for each target stock. A time series of such indices is being maintained.

Scoring Guidepost 80

Indices of abundance are monitored on an annual basis. If based on fishery-dependent data, an appropriate and consistent measure of fishing effort is being used, which avoids changes in fishing power associated with changing fishing practices. Factors, e.g. environmental variables or changes in fishing practice, that may affect the index of abundance have been identified and are being monitored and incorporated into the analyses.

Scoring Guidepost 100

Fishery independent indices of abundance are available. Indices of abundance of mature fish are available.

Indicator 1.1.1.4 There is adequate knowledge of environmental influences on stock dynamics to manage the fishery for the target stock.

Scoring Guidepost 60

A conceptual understanding of the relationships between fish abundance and both habitat and environment has been developed.

Scoring Guidepost 80

Relationships between environmental variables and catches, indices of abundance, growth, etc. have been investigated at least qualitatively.

Scoring Guidepost 100

There is a sound understanding of the relationship between catches and/or indices of abundance and environmental variables.

SC 1.1.2 There is adequate knowledge about the fishery for each target stock.

This sub-criterion is intended to assess whether data collected from the Lakes and Coorong fishery (and other fisheries exploiting the same target stock) regarding fishing operations and catches allow an accurate and precise assessment of the impacts of fishing on the various size and age classes of the target stock at appropriate spatial and temporal resolution. Sufficient data should be collected to enable the level of exploitation of the target stock to be accurately assessed and to allow factors affecting the indicator variables and indices of abundance of the stock to be taken into account when statistical analyses of these data are undertaken.

Indicator 1.1.2.1 All major sources of fishing mortality, including illegal fishing on the target stock, are measured or estimated.

Scoring Guidepost 60

Estimates on the catch from the target stock by all significant fishing sectors and fisheries, including those exploiting the stock outside the bounds of the Lakes and Coorong fishery, are available.

Scoring Guidepost 80

Data on retained and discarded catches of the target stock are collected from each significant fishing sector at an appropriate spatial and temporal resolution. A broad estimate is available of the mortality of discarded individuals of the target species. Broad estimates of illegal catches are available.

Scoring Guidepost 100

An accurate estimate is available of the mortality of discarded individuals of the target species. Catch data are collected from the fishery at a level of resolution determined by the fishing gear (e.g., haul of a gill net) or fishing technique and at the spatial resolution appropriate to the fishing operation. Accuracy of catch data have been confirmed by fishery-independent data.

Indicator 1.1.2.2 The size and age structure of catches and sex ratio are measured.

Scoring Guidepost 60

Estimates on the size and/or age composition of the stock fished are available.

Scoring Guidepost 80

Data on the size and/or age composition of representative samples of the commercial catch are collected at an appropriate spatial and temporal resolution and analyzed.

Scoring Guidepost 100

Selectivity of fishing gear is considered when assessing the size and composition of each stock.

Indicator 1.1.2.3 Fishing methods and patterns are well understood.

Scoring Guidepost 60

Estimates on the fishing effort expended by each significant fishing sector (and fishery), by gear type, are available.

Scoring Guidepost 80

Effort data are collected from each commercial fishery at an appropriate spatial and temporal resolution.

Scoring Guidepost 100

Factors influencing the efficiency of different fishing gears and different sectors have been identified and data are collected to allow changes in efficiency to be assessed. Factors that influence the switching among species in the multi-species fishery have also been identified and taken into account.

SC 1.1.3 There is a well-defined and effective strategy for managing exploitation of each target stock.

This sub-criterion is intended to assess whether an explicit strategy has been implemented to control the exploitation of the stock at a level that, considering the biology of the species and the availability of data, is highly likely to ensure that the stock is sustained at an appropriate level. Harvest controls should respond appropriately if the abundance of the stock declines, should be robust with respect to uncertainty of data and natural variability, implementation or the impact of fishing mortality imposed by other fishing sectors, and should be precautionary. Evidence that the harvest control rules are being applied to the fishery by fisheries managers should be available. The outcomes of application of the rules should be examined to determine whether the rules appear to be effective in controlling exploitation. In assessing effectiveness of the strategy, consideration should be given to the multi-species nature of the fishery and the effort switching among species that is a character of the Lakes and Coorong fishery. A suite of harvest strategies is used in the fishery, including both input and output controls, closed regions, etc., and it is the extent to which this combination of strategies is effective in managing exploitation that must be assessed.

Indicator 1.1.3.1 The rules and procedures for limiting effort or catch are adequately defined and effective.

Scoring Guidepost 60

Rules exist to constrain exploitation to an appropriate level, where this level has been broadly assessed on the basis of historical catches, indices of abundance, fishing practices and expert opinion.

Scoring Guidepost 80

Explicit harvest control rules and procedures have been defined and implemented. Reference points have been adopted such that when an indicator variable falls beyond the reference points, an appropriate management action is triggered that is designed to maintain the fishery within an acceptable range of catches and abundance indices.

Scoring Guidepost 100

The reference points are well selected and precautionary such that, despite interannual variability, abnormal levels of recruitment, spawning stock, exploitation or environmental conditions are likely to be detected.

Indicator 1.1.3.2 The harvest strategy is precautionary.

Scoring Guidepost 60

There is an implemented harvest strategy that includes at least one control point that triggers a required management response.

Scoring Guidepost 80

The harvest strategy includes multiple and diverse control points, all of which trigger specified management responses. If any control point is triggered, the management response requires that data are collected and analyzed to assess whether the fishery and the stock responds in accordance with expectation.

Scoring Guidepost 100

The harvest control rules have been tested to assess whether they are sufficiently precautionary and effective. The rules are periodically reviewed.

Criterion 1.2 (MSC Criterion 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.

Intent: The potential impact of fishing on the genetic structure of the stock or on the ability of the stock to reproduce should be recognized. Size, age and sex composition and abundance of mature individuals will inevitably be affected by fishing mortality.

However, fishing may also impact on the genetic structure of the stock or affect growth or the relationship between fish length and the proportion of fish that are mature. Such impacts need to be monitored and an appropriate management response taken if evidence becomes available of any adverse change to the stock's reproductive capacity.

Indicator 1.2.1 To maintain the reproductive capacity of the target species, the level of spawning biomass of the stock is assessed to ensure that it remains above threshold levels.

Scoring Guidepost 60

A broad index of spawning biomass (or proxy) is available.

Scoring Guidepost 80

An index of spawning biomass is calculated periodically and is compared against a specified threshold.

Scoring Guidepost 100

There is an annual assessment of the spawning biomass index, which is compared to a set threshold. The index and threshold are periodically tested to ensure the reproductive capacity of the target species is maintained.

MSC Principle 2:

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.

Criterion 2.1 (MSC Criterion 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.

SC 2.1.1 **There is adequate knowledge of the ecosystem relevant to the distribution, life history strategy and fishery for the target species.**

Indicator 2.1.1.1 **The nature and distribution of habitats and communities relevant to the fishing operations are adequately understood.**

Intent: This PI intends to assess the extent to which there is sufficient information about the ecosystems and habitats where the fishery operates to provide for properly informed assessments of the ecosystem impacts of the fishery.

Scoring Guidepost 60

Information exists in specific areas of the fishery, or in adjacent areas, but this may not be comprehensive or up to date.

Scoring Guidepost 80

The nature and distribution of the main habitats and communities where the fishery operates have been documented, such as mapping.

Scoring Guidepost 100

The nature and the distribution of all habitats and communities relevant to the fishing operations are known in detail from extensive research studies, and are documented (such as mapping) based on recent information.

Indicator 2.1.1.2 **Information on the trophic relationships and interactions of the target species within the foodweb is adequate to understand the impacts of the fishery.**

Intent: This PI intends to assess the extent to which there is sufficient information about the trophic relationships of the target species to provide for properly informed assessments of the trophic impacts of the fishery.

Scoring Guidepost 60

Research projects are underway to study relevant foodwebs in the area.

Scoring Guidepost 80

The main prey and predators of the target species are known.

Scoring Guidepost 100

Quantitative information is available on the position and importance of the target species within the food web at key life stages, derived from extensive research projects on trophic interactions.

SC 2.1.2 There is knowledge of the fishery and its characteristics that is adequate for assessing ecosystem impacts

Indicator 2.1.2.1 The fishery characteristics, including gear types, areas and times fished, and level of effort are adequately understood for the purposes of assessing ecosystem impacts of the fishery.

Intent: This PI intends to assess the extent to which there is sufficient knowledge of the characteristics of the fishery to provide for an informed assessment of the ecosystem impacts of the fishery.

Scoring Guidepost 60

Only permitted gear types are used in the fishery, and the main fishing patterns in the fishery are well enough understood to relate them generally to important ecosystem issues (such as sensitive habitats or important biological communities or sites).

Scoring Guidepost 80

The use of each gear type, in space and time, is well known and periodically reported to fishery managers.

Scoring Guidepost 100

The patterns of gear use are monitored at a fine enough scale and on a daily basis to understand the wide variety of biological interactions associated with fishing and related activities. All data is properly reported to fishery managers.

Indicator 2.1.2.2 There is adequate knowledge of the impacts on the habitat of fishing gear and operations associated with fishing.

Intent: This PI intends to assess the extent to which there is sufficient knowledge about the physical impacts of the gear types on habitats to provide for an informed assessment of the impacts of the fishery.

Scoring Guidepost 60

The effects of the main gear types and operations associated with fishing in the fishery are generally understood and considered to have minor impacts based on studies in other fisheries.

Scoring Guidepost 80

Scoring Guidepost 60

Management systems in the fishery recognise impact identification and avoidance/reduction but there are only limited objectives and strategies that have been adopted.

Scoring Guidepost 80

A range of management objectives and strategies designed to detect and reduce ecosystem impacts have been implemented, and are determined in conjunction with an appropriate range of ecological expertise and stakeholders.

Scoring Guidepost 100

Management objectives and strategies for restraining ecosystem impacts are monitored for effective compliance across the fishery, and any unavoidable impacts are mitigated on a precautionary basis (such as using fishing closures in space or time).

SC 2.1.5 Assessments of impacts of the fishery show no unacceptable impacts on the ecosystem structure and/or function, on habitats or on the populations of associated and dependent species.

Indicator 2.1.5.1 Effects of the fishery on the ecosystem, through the removal of target and non-target species and impacts on habitats, are not unacceptable.

Intent: This PI intends to assess the extent to which any impacts of the fishery on ecosystems are not unacceptable in the sense that they do not exceed acceptable limits.

Scoring Guidepost 60

Impacts of the fishery on the ecosystem are thought to be acceptable, based on information on impacts from other comparable fisheries situations.

Scoring Guidepost 80

Impacts of the fishery are acceptable based on data derived from this fishery and on advice from a range of ecological experts and stakeholders.

Scoring Guidepost 100

Impacts of the fishery are assessed in ongoing research projects, and quantified by appropriate comparative and manipulative studies using fished and unfished areas, and found to be within acceptable limits.

Criterion 2.2 (MSC Criterion 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.

SC 2.2.1 **There is adequate knowledge about protected, endangered, threatened or icon species that may be potentially affected by the fishery.**

Indicator 2.2.1.1 **The identity and distribution of protected, endangered, threatened or icon species in the vicinity of the fishery are adequately understood.**

Intent: This PI intends to assess the extent to which there is sufficient information about the protected, endangered, threatened or icon species where the fishery operates to provide for properly informed assessments of the impacts of the fishery.

Scoring Guidepost 60

A list of the key species is available, together some notes on their distribution in the vicinity of the fishery.

Scoring Guidepost 80

The distribution of protected, endangered, threatened or icon species that regularly occur in the vicinity of the fishery is known.

Scoring Guidepost 100

Maps of the distribution of each of the protected, endangered, threatened or icon species are readily available, together with details of any seasonal or periodic aggregations.

Indicator 2.2.1.2 **Information on the trophic dependency, habitat use, or other interactions of protected, endangered, threatened or icon species with the target species are adequately understood.**

Intent: This PI intends to assess the extent to which there is sufficient information about the trophic relationships between the protected, endangered, threatened or icon species and the target species to provide for properly informed assessments of the impacts of the fishery.

Scoring Guidepost 60

The natural history, habitat use and trophic preferences of protected, endangered, threatened or icon species that may occur in the main fishing grounds are broadly understood from studies in other fisheries.

Scoring Guidepost 80

The trophic interactions and habitat use of protected, endangered, threatened or icon species in relation to the target and non-target species are broadly understood in relation to the main fishing grounds.

Scoring Guidepost 100

The trophic preferences and habitat use of protected, endangered, threatened or icon species, has been determined in quantitative research projects in the fishing grounds and

the vicinity of the fishery, and is derived from studies comparing fished and unfished areas.

SC 2.2.2 **There is adequate knowledge about the risks to protected, endangered, threatened or icon species that may be posed by the fishery.**

Indicator 2.2.2.1 **Information on the nature and extent of the by-catch of, or habitat interactions with, protected, endangered, threatened or icon species is adequate.**

Intent: This PI intends to assess if there is sufficient information about the potential bycatch of protected, endangered, threatened or icon species to provide for properly informed assessments of the impacts of the fishery.

Scoring Guidepost 60

The main by-catch of protected, endangered, threatened or icon species in the fishery have been identified.

Scoring Guidepost 80

The catch of, and incidental impacts on, protected, endangered, threatened or icon species is monitored and reported, and the data are routinely synthesised and assessed with assistance of an appropriate range of fishery management, ecological expertise and stakeholders

Scoring Guidepost 100

The bycatch of any protected, endangered, threatened or icon species is monitored and reported in detail, and population status of each such species is regularly assessed.

Indicator 2.2.2.2 **There is adequate knowledge of the use of fishing gear and operations associated with fishing in habitats of importance to protected, endangered, threatened or icon species.**

Intent: This PI intends to assess if there is sufficient information about the use of each gear type used in the fishery on the habitats where the fishery operates to provide for properly informed assessments of the impacts of the fishery.

Scoring Guidepost 60

The main usage of gear types and operations associated with fishing and deployment practices have been identified.

Scoring Guidepost 80

The main patterns in deployment of gear types and operations associated with fishing in the main habitats have been identified, including extent, location and frequency of use.

Scoring Guidepost 100

The characteristics of each gear type and operations associated with fishing and their deployment details have been quantified, including details of usage near any habitats sensitive for protected, endangered, threatened or icon species, and deployment patterns are routinely monitored and reported for assessment purposes.

SC 2.2.3 Strategies have been developed to avoid or minimise impacts on protected, endangered, threatened or icon species.

Indicator 2.2.3.1 Management objectives and strategies are established to restrain potential impacts on protected, endangered, threatened or icon species.

Intent: This PI intends to assess if strategies have been developed and implemented in the fishery that are sufficient to restrain the fishery from having unacceptable impacts on the protected, endangered, threatened or icon species.

Scoring Guidepost 60

Management systems in the fishery recognize impact identification and avoidance/reduction but there are only limited objectives and strategies that have been adopted to restrain impacts on protected, endangered, threatened or icon species.

Scoring Guidepost 80

A range of management objectives and strategies designed to detect and reduce impacts on protected, endangered, threatened or icon species have been implemented, and are determined in conjunction with an appropriate range of ecological expertise and stakeholders.

Scoring Guidepost 100

Management objectives and strategies for restraining impacts on protected, endangered, threatened or icon species are monitored for effective compliance across the fishery, and any unavoidable impacts are mitigated on a precautionary basis through the use of closed areas/times or other equivalently highly effective measures.

SC 2.2.4 Fishing is conducted in a manner that does not have unacceptable impacts on protected, endangered, threatened or icon species.

Indicator 2.2.4.1 The interaction of the fishery with protected, endangered, threatened or icon species does not result in unacceptable impacts.

Intent: This PI intends to assess the extent to which any impacts of the fishery on protected, endangered, threatened or icon species are not unacceptable in the sense that they do not exceed acceptable limits.

Scoring Guidepost 60

There is no evidence that the fishery has detrimental impacts on any population of a protected, endangered, threatened or icon species in the vicinity of the fishery.

Scoring Guidepost 80

An assessment of the impacts of the fishery on each protected, endangered, threatened or icon species has demonstrated that impacts are within agreed acceptable limits, determined in consultation with a range of ecological experts and stakeholders.

Scoring Guidepost 100

There is a regular assessment of the impacts of the fishery on each protected, endangered, threatened or icon species, and impacts are always within the prescribed acceptable limits.

MSC 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: This principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2 appropriate to the community based Lakes and Coorong fishery. This is the governance principle that integrates the principles and objectives of the Lakes and Coorong fishery management system.

Criterion 3.1 The management system has a clearly defined scope, capable of achieving MSC Principles and Criteria and includes short and long-term objectives, including ecosystem objectives, consistent with a well managed fishery.

Intent: This criterion is to assess the match between the management systems of the multi-species Lakes and Coorong fishery and the terms and intentions of the MSC Principles and Criteria.

Indicator 3.1.1 The management system incorporates and applies an adaptive and precautionary exploited stock strategy for a multi-species fishery. [Relates to MSC Criteria 3.2, 3.7, 3.9, 3.10]

Intent: To assess whether a plan of management exists for the Lakes and Coorong fishery that has a stock assessment strategy for the four key commercial species, including assessments of these stocks, appropriate data collection and research, and fishing effort controls that can be adapted to account for changes in the fishery.

Scoring Guidepost 60

The management system has the means to collect basic data on the fishery, recognizes the need for sustainability indicators and has basic controls on fishing effort.

Scoring Guidepost 80

The management system has a process to develop sustainability indicators, including catch rates, and sets objectives related to these data, has measures to control effort, assessments of the key species have been undertaken and a plan of management exists.

Scoring Guidepost 100

The management system includes scientific assessment of stocks and sets precautionary long-term stock management objectives and stock assessments and harvest strategy evaluations are undertaken in an open process and the methods and results made available in published reports and periodically externally reviewed. Also, the harvest strategy includes effective effort and/or output controls, maintains stocks at productive levels (specified by appropriate target and limit reference points), provides for the recovery of depleted stocks to specified levels within specified time frames, and is

evaluated using robust assessment methods that consider the use of a range of management tools.

Indicator 3.1.2 The management system incorporates and applies an effective strategy to manage the ecological impacts of fishing [Relates to MSC Criteria 3.2, 3.7, 3.9, 3.10]

Intent: To assess whether the plan of management has a strategy that identifies, mitigates and monitors the ecological impacts of the lakes and Coorong fishing operations through the application of appropriate input controls and recognizes and includes appropriate community and conservation/environment management approaches.

Scoring Guidepost 60

Management system ensures awareness of ecological impacts of fishing and the collection of some basic fishery data.

Scoring Guidepost 80

The management system considers ecological impacts from fishing, has processes for dealing with the impacts, and has expert advice and consultation processes as required. .

Scoring Guidepost 100

The management system has a formal strategy that takes into account all significant ecological impacts of the fishery, including non-target species and habitats and monitoring processes are in place.

Indicator 3.1.3 The management system incorporates and applies an effective strategy to manage the socio-economic impacts of the fishery, and the fishery is free from significant subsidies, which promote over-fishing or ecosystem degradation. [Relates to MSC Criteria 3.2, 3.4, 3.6, 3.7]

Intent: To assess whether the plan of management incorporates the socio-economic context within which the Lakes and Coorong fishing operations take place through understanding the social and economic connectivity of fishing, fishing rights (whatever the degree of exclusivity) and other stakeholders participating in the fishery.

Scoring Guidepost 60

The fishery management system seeks to understand social and economic consequences of decision-making so they can identify subsidies to the fishery that promote over-fishing or ecosystem degradation.

Scoring Guidepost 80

The management system formally considers the long-term interests of people dependent on fishing for food and livelihood, and there are no significant direct subsidies to the fishery that promote over-fishing or ecosystem degradation.

Scoring Guidepost 100

The management system considers the long-term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability and ensures that all aspects of fishery are free from significant direct subsidies that promote over fishing or ecosystem degradation.

Indicator 3.1.4 The management system has a plan for research needed to support the harvest strategy [Relates to MSC Criterion 3. 8]

Intent: To assess the linkage between the plan of management objectives with the research plan and strategies, including harvest strategies and biological processes.

Scoring Guidepost 60

A basic research plan exists. Reasonable minimum research to support management is undertaken and considered in the management of the fishery.

Scoring Guidepost 80

There is a research plan to support the management system, resources are available for critical studies in support of management, and the data collected is used for species reports and stock assessments.

Scoring Guidepost 100

There is a research plan, designed jointly by scientists, managers and stakeholders to support the management system, resources are available to support research for the needs of management, research results are published and considered under the management system, and harvest strategies for the fishery are based on stock assessments.

Indicator 3.1.5 The management system has a plan for research needed to support the understanding of the ecological impacts of fishing [Relates to MSC Criterion 3.8.]

Intent: To assess the linkage between the plan of management objectives with the research plan and strategies, including the interactions between ecological processes and fishing operations.

Scoring Guidepost 60

A basic research plan exists. Reasonable minimum research to support ecosystem management is undertaken and considered in the management of the fishery.

Scoring Guidepost 80

The management system has processes for establishing a research plan to support the understanding of the impacts of the fishery on the ecosystem, and resources are available for critical studies in support of ecosystem management.

Scoring Guidepost 100

There is a research plan, designed jointly by experts, managers and stakeholders to support the ecosystem and to address significant environmental impacts of fishing, resources are available to support research for the needs of ecosystem management, the effectiveness of the research plan has been assessed and the research results are published and considered under the management system

Criterion 3.2 The management system recognizes applicable legislative and institutional responsibilities and coordinates implementation on a regular, integral, explicit basis.

Intent: This criterion is to assess the compliance of the multi-species Lakes and Coorong fishery management system with the applicable conventions, laws and rules.

Indicator 3.2.1 The fishery is managed and conducted in a manner that respects international conventions and agreements and not under any controversial unilateral exemption to an international agreement [Relates to MSC Criterion 3.1]

Intent: To assess whether the Lakes and Coorong fishery adheres to international conventions and laws such as UNCLOS and the Convention on Biodiversity.

Scoring Guidepost 60

The management system appears to operate within applicable international conventions and agreements, although no detailed examination of this has been made.

Scoring Guidepost 80

The management system does not employ or in any manner seek to operate within any exemption to otherwise applicable international conventions and agreements, and all appropriate laws have been identified.

Scoring Guidepost 100

All measures taken within the management system are in compliance with relevant international treaty and agreement obligations and no unilateral exemptions from any treaty obligation pertaining to the fishery are undertaken.

Indicator 3.2.2 The fishery is managed and conducted in a manner that complies with domestic law [Relates to MSC Criterion 3.16].

Intent: To assess whether the Lakes and Coorong fishery adheres to Australian and South Australian laws.

Scoring Guidepost 60

The management system appears from preliminary observations to operate within applicable domestic law and no noted violations have been identified that would jeopardize the management of fisheries resources.

Scoring Guidepost 80

The management system is known to be in compliance with all substantive and procedural aspects of applicable domestic law, there are no known repeat offences and no consistent judgments against the fishery that would jeopardize the resource.

Scoring Guidepost 100

The management system is consistently in compliance with all substantive and procedural aspects of applicable domestic law and no officer or agent of the management system, including its component entities, has been found to be in contempt of any domestic court of jurisdiction on any matter related to performance of official duties on behalf of the management system

Criterion 3.3 Stakeholders are directly involved in management of the fishery, disputes can be settled within the system and the managers have useful advice on which to base decisions.

Intent: This criterion is that the system of management is based on principles of participation that ensures these stakeholders are an integral part of the decision making processes that includes appropriate conflict resolution procedures and adequate information for decision making.

Indicator 3.3.1 The management system involves all categories of stakeholders appropriately on a regular, integral, explicit basis [Relates to MSC Criterion 3.2].

Intent: To assess whether all categories of stakeholders are part of a formal, transparent decision making processes of the management system.

Scoring Guidepost 60

The management system has informal processes that allow for stakeholder groups to be consulted.

Scoring Guidepost 80

The management system makes decisions after formally consulting stakeholder groups.

Scoring Guidepost 100

The management system makes transparent decisions that fully account and serve all stakeholder groups and ensures that stakeholders are involved in the management advisory processes.

Indicator 3.3.2 The management system provides for timely and fair resolution of disagreements [Relates to MSC Criteria 3.2, 3.5].

Intent: To assess whether appropriate conflict resolution processes are incorporated and enforced within the system of management.

Scoring Guidepost 60

Mechanisms for informal dispute resolution exist, and are used by some stakeholders.

Scoring Guidepost 80

The management system has effective mechanisms for both formal and informal transparent processes for the resolution of disputes at all levels of, and for, most issues arising within the system.

Scoring Guidepost 100

The management system has established objective mechanisms for resolution of disputes at all levels of, and for all issues arising within the system and that these dispute resolution procedures show evidence of being open to and used by a variety of participants and stakeholders where appropriate.

Indicator 3.3.3 The management system presents managers with clear, relevant information, which is considered in decision-making [Relates to MSC Criterion 3.2].

Intent: To assess whether the system of management provides for the formal collection, analysis of information so that managers and the decision making processes are based on the ‘best available information’.

Scoring Guidepost 60

The management system’s decision makers are provided with clear and relevant information under the management system and there is evidence that it is considered in the decision making process.

Scoring Guidepost 80

The decision-makers show evidence of considering the information provided to them under the management system and some evidence that alternative proposals of stakeholders have been considered.

Scoring Guidepost 100

The management system regularly provides decision makers with analyzed alternatives for action and shows evidence of a pattern of behavior by decision makers that reveals that they have found the information provided to them to be useful.

Criterion 3.4 The management system applies information through implementation of measures and strategies (by rule or by voluntary action of fishery) that demonstrably control the degree of exploitation of the resource in the light of the natural variation in ecosystems.

Intent: This criterion is to ensure that the best available information of the ecological aspects of the fishery is used in the development and application of effective exploitation control mechanisms.

Indicator 3.4.1 The management system has measures and strategies that restrict gear and practices to avoid by-catch, minimize mortality of by-catch, and reduce discards [Relates to MSC Criterion 3.12, 3.17].

Intent: To assess whether the system of management has effective controls on the Lakes and Coorong fishing gear and operations to reduce the levels of by-catch and discards.

Scoring Guidepost 60

By-catch reduction has been considered by the management system and fishers cooperate in the implementation.

Scoring Guidepost 80

Specific by-catch reduction methods/strategies are included in the management of the fishery.

Scoring Guidepost 100

There are specific requirements in place to significantly reduce by-catch and discards in the management system and results are measured against a series of agreed goals.

Indicator 3.4.2 The management system has measures and strategies that minimize adverse impacts on the habitat [Relates to MSC Criteria 3.10, 3.13].

Intent: To assess whether the system of management has effective controls on the Lakes and Coorong fishers to minimize the impacts of fishing gear and operations on habitat.

Scoring Guidepost 60

The management system has processes to identify and document fishery impacts on all major habitats.

Scoring Guidepost 80

The management system has processes for gathering of knowledge on sensitive habitats in the area of the fishery, and there are mechanisms in place to assess whether the impacts are significant and to respond accordingly.

Scoring Guidepost 100

The management system requires efforts to identify and document fishery impacts on all habitats and mechanisms have been established to assist fishers in changing fishing operations to reduce habitat damage.

Indicator 3.4.3 The management system does not allow use of destructive fishing practices [Relates to MSC Criterion 3.14].

Intent: To assess whether the system of management has effective controls on the Lakes and Coorong fishers to stop the use of destructive fishing practices.

Scoring Guidepost 60

The management system prohibits the use explosives or toxic chemicals to kill or stun aquatic species and defines specific penalties.

Scoring Guidepost 80

There is evidence that the fishery does not use destructive fishing practices to kill or stun aquatic species.

Scoring Guidepost 100

There is a formal monitoring system in place to determine if such destructive fishing practices occur.

Indicator 3.4.4 The management system provides for rebuilding and recovery [Relates to MSC Criterion 3.10].

Intent: To assess whether the system of management has effective information of the status of fish stocks including reference and trigger points and strategies to rebuild the four stocks as determined.

Scoring Guidepost 60

There are regular discussions by key stakeholders on the state of the stocks to consider if these were over exploited, in need of rebuilding including possible recovery strategies.

Scoring Guidepost 80

Assessments are made of the population, and or stocks, to determine if they are falling below acceptable levels (a predetermined trigger point - threshold/limit point), and where stocks are identified as depleted there is a timely process in place to allow for developing plans for rebuilding appropriate to the stock (i.e. taking note of a mixed species fishery with potential effort transfer).

Scoring Guidepost 100

Where population or stocks impacted by the fishery have declined below acceptable levels, the management system is structured so that pre-developed plans will be implemented.

Indicator 3.4.5 Incorporates no-take zones where appropriate [Relates to MSC Criterion 3.10].

Intent: To assess whether the system of management has options for establishing and enforcing no-take MPAs for both fisheries management and conservation/biodiversity objectives.

Scoring Guidepost 60

Management system has the ability to incorporate closures where appropriate to manage effort and impacts of fishing.

Scoring Guidepost 80

The management system has processes for including the use of no-take zones as a means of achieving the fishing, conservation/biodiversity objectives/strategies of the fishery, and conservation agencies are consulted on the need for, and implementation of, these zones.

Scoring Guidepost 100

The management system has processes for review, modification and implementation of established no-take zones and the purpose and effectiveness of these no-take zones is described and assessed.

Indicator 3.4.6 The management system minimizes operational waste [Relates to MSC Criterion 3.15].

Intent: To assess whether the system of management has effective controls on the Lakes and Coorong fishers to reduce waste of fishing operations such as plastic, oils and ghost fishing gear.

Scoring Guidepost 60

The management system has processes that encourage fishers to consider the impacts of their fishing operations waste and develop strategies to minimize waste.

Scoring Guidepost 80

The fishery encourages minimization of operational wastes and there is evidence of its effectiveness.

Scoring Guidepost 100

There are effective monitoring and enforcement programs for reducing operational waste from the fishery, through an agreed Environmental Management System.

Criterion 3.5 The management system provides for enforcement and compliance

Intent: The intention of this criterion is to ensure that the multi-species Lakes and Coorong fishery management system has components for monitoring, control, surveillance and enforcement and adhered to by stakeholders.

Indicator 3.5.1 The management system enforces compliance in the fishery and has knowledge of the level of illegal fishing on the target species. [Relates to MSC Criteria 3.11, 3.16]

Intent: To assess whether the system of management has effective compliance controls on the Lakes and Coorong fishers to stop illegal fishing practices.

Scoring Guidepost 60

The management system has a compliance and enforcement system with capacity to constrain illegal fishing to meet the objectives of the management plan.

Scoring Guidepost 80

The management system has established a compliance and enforcement system and has demonstrated a consistent ability to enforce applicable rules designed to ensure the level of illegal fishing meets stated objectives.

Scoring Guidepost 100

The management system has established a comprehensive compliance and enforcement system, contains procedures for effective compliance; monitoring, control, surveillance and enforcement, which ensure that management system controls are not violated and appropriate corrective actions are taken to meet required outcomes. There is evidence of minimal violations of illegal fishing.

Criterion 3.6 The performance of the management system is regularly and candidly evaluated and adapted as needed to improve

Intent: This criterion is to ensure that the management system of the multi-species lakes and Coorong fishery is regularly assessed and improved.

Indicator 3.6.1 The management system provides for internal assessment and review [Relates to MSC Criterion 3.3].

Intent: To assess whether the Lakes and Coorong system of management has an effective internal assessment and review mechanism that has been implemented.

Scoring Guidepost 60

The management system has an informal internal system for evaluation of management performance as it relates to the sustainability of the fishery.

Scoring Guidepost 80

The management system has a systematic system for evaluation of management performance as it relates to the sustainability of the fishery.

Scoring Guidepost 100

The management system has a formal and transparent internal, continuing, system for evaluation of management performance as it relates to the sustainability of the fishery.

Indicator 3.6.2 The management system provides for external assessment and review [Relates to MSC Criterion 3.2, 3.3].

Intent: To assess whether the Lakes and Coorong system of management has an effective external assessment and review mechanism that has been implemented.

Scoring Guidepost 60

Aspects of the management system and assessments have an occasional external review as it relates to the sustainability of the fishery.

Scoring Guidepost 80

The management system has a system for a regular external evaluation of management performance as it relates to the sustainability of the fishery.

Scoring Guidepost 100

The management system provides for an independent, expert review of management performance as it relates to the sustainability of the fishery.