

# Principle 1

Criterion 1.1

Indicator 1A: There is adequate knowledge about the exploited target stock The intent of this performance indicator is to evaluate the extent to which there is sufficient knowledge of the life history, distribution and abundance of the target species to allow an adequate evaluation of the effects of the fishery on the target species.

Elements considered in scoring include:

- 1. There is adequate knowledge of the identity of the target species, and its range and stock structure;
- 2. There is adequate knowledge of the life history (fecundity, growth, natural mortality) and behaviour of the target species; and
- 3. There is adequate information on trends in abundance of spawning stock, larval recruitment, and fishery recruitment.

# 100 Scoring Guidepost

- There is comprehensive knowledge of the taxonomy of the species, its range, and of any genetic sub-structuring of fished populations based on state-of-the-art techniques.
- There is comprehensive knowledge of key life history parameters, and of the behaviour and ecology of key life history stages.
- Comprehensive, fishery independent surveys of spawning stock size and larval and fishery recruitment are available over a substantial period of the history of the fishery.

#### 80 Scoring Guidepost

- The target species cannot be confused with any other species. Research data are adequate to assess whether multiple stocks are being fished.
- Reliable estimates are available of fecundity at size, growth rates and natural mortality. The seasonal patterns of movement or availability to the fishery are known.
- Reliable fishery independent estimates of abundance are available (or fishery dependent estimates have been shown to be reliable).

#### 60 Scoring Guidepost

- The target species is unlikely to be confused with any other species. Research data indicate whether multiple stocks are being fished.
- Estimates are available of fecundity at size, growth rates and natural mortality. There is limited knowledge of seasonal patterns of movement or availability to the fishery.
- Some fishery independent estimates of abundance are available (or fishery dependent estimates have been shown to be reliable).

# Indicator 1B: There is adequate knowledge about the fishery

The intent of this performance indicator is to evaluate the extent to which is sufficient knowledge of the fishery, including spatial and temporal patterns in catch and efforts



# by all fishing methods including discards and incidental mortality of the target species, to allow an effective evaluation of the productivity of the target species.

Elements considered in scoring include:

- 1. There is adequate monitoring of catch and effort;
- 2. There is adequate monitoring of the landings, discards, incidental mortality;
- 3. There is adequate information on fishing methods and fishing patterns;
- 4. There is adequate information on gear selectivity and on changes in catchability over time.

#### 100 Scoring Guidepost

- There are comprehensive data available at fine spatial and temporal resolution on fishing effort in all sectors and on catches, discards (by size) and incidental mortality from all fishing methods.
- There is an independent at-sea observation program to measure discarding and document fishing practices.
- Research programs have established gear selectivity and key determinants of catchability including, where relevant, environmental influences and changes in fishing technology and practices.

# 80 Scoring Guidepost

- Total annual catch and effort by fishing methods are known for the major spatial zones of the fishery. Reliable data are available to estimate levels of discards. Data on size composition of the catch are available on a regular basis.
- There is an independent at-sea observation program to measure discarding and document fishing practices.
- Gear selectivity of fishing methods is known.
- Reliable estimates of catchability is considered for stock assessments and used if required.

#### 60 Scoring Guidepost

- Total annual catch and effort by fishing methods are known for the major spatial zones of the fishery. Data are available to estimate levels of discards. Data on size composition of the catch are available on a regular basis.
- There is an at-sea observation program in-place to measure discarding and document fishing practices.
- Gear selectivity is included in the fishery stock assessments.
- Catchability is considered for stock assessments and used if required.

#### Indicator 1C: There is a robust assessment of the stocks.

The intent of this performance indicator is to evaluate the extent to which the methods used to assess the current and the future state of the stocks and future impacts of the fishery on the target species are robust and rigorous.

Elements considered in scoring include:

- 1. The assessment models used are appropriate to the biology of the species and the nature of the fishery;
- 2. The methods used to fit the models to date are statistically rigorous;



- 3. The sensitivity of the assessment to major uncertainties in data and assumptions have been evaluated and a precautionary approach to decision making is reflected in management advice; and
- 4. The assessment evaluated current stock status relative to prescribed reference points, and the future consequences of current harvest strategies.

- Assessment models and methods have been developed specifically for, and are appropriate to, the species and fishery in question and take account of all known and significant impacts of the fishery on the target species.
- Agreed harvest strategies are in place that specify monitoring strategies, assessment methods and decision rules for determining management response to assessment results. These harvest strategies have been formally evaluated that take account of a wide range of uncertainties.

#### 80 Scoring Guidepost

- Assessment models and methods are appropriate to the species and fishery, take into account major impacts of the fishery on the target species, and meet internationally accepted standards of rigor.
- There are reliable estimates of current stock size and harvest rates and these have been evaluated against appropriate limit reference points.
- The assessment takes into account of key uncertainties, and predicts future consequences, and a precautionary approach to making management decisions is used in the management advice.

#### 60 Scoring Guidepost

- Assessment models and methods are appropriate to the species and fishery.
- Current stock size and harvest rates have been estimated and evaluated against appropriate limit reference points.
- The assessment takes account of key uncertainties and these are reflected in the management advice.

Indicator 1D: There is a well-defined and effective strategy to manage the target stocks The intent of this performance indicator is to evaluate the extent to which there is a well-defined and effective strategy in place that will maintain the target species at productive levels, or the recover the target species to productive levels if already below such levels.

Elements considered in scoring include:

- 1. Fishing effort is contained;
- 2. Management tools (input and/or output controls) are specified and appropriate; and
- 3. The relationship between assessment advise and subsequent decisions is clear, and has been evaluated and action is timely.

#### 100 Scoring Guidepost

• There is an explicit and precautionary strategy in place for management of the target species.



- The strategy specifies monitoring and stock assessment methods, and agreed rules for setting management measures on the basis of assessments.
- Catch levels are appropriate to the productive potential of the resource.
- Assessment advice is implemented and action is timely.

- There is a harvest strategy in place to manage the catch and effort in the fishery.
- The strategy is adaptive, and management measures are set on the basis of best scientific information, taking account of uncertainty.
- When the quota holders reach their ITQ, there are effective measures to prevent any further fishing.

#### 60 Scoring Guidepost

- There is a basic harvest strategy to manage the catch and effort in the fishery.
- The strategy is adaptive, and management measures are set on the basis of available information, taking into account uncertainty.
- A strategy is in place to monitor attainment of the TACC and control effort accordingly in a timely manner.

#### Indicator 1E: Stocks are not depleted and harvest rates are sustainable The intent of this performance indicator is to evaluate whether the target species is currently overfished, and whether current harvest levels are appropriate.

Elements considered in scoring include:

- 1. The assessment indicated that stocks are above specified limit reference levels;
- 2. The assessment indicates that harvest rates are below specified limit reference levels; and
- 3. The limit reference points used meet acceptable international standards.

#### 100 Scoring Guidepost

- The limit reference point selected for the stock is at least as precautionary as B<sub>MSY</sub>.
- The stock is above the limit reference point.
- The limit reference point selected for the exploitation rate is at least as precautionary as F<sub>MSY</sub>.
- The current exploitation rate is below the limit reference point.

- A biomass limit reference point has been chosen that is appropriate for the species and is above levels for which major declines in recruitment have been observed or are expected.
- The stock is assessed to have a high probability of being above the limit reference point.
- A limit reference point has been chosen for the exploitation rate that is appropriate for the species.
- There is a high probability that the current exploitation rate is below the limit reference point.



- A biomass limit reference point has been chosen that is appropriate for the species.
- Historical data indicate that the stock is assessed to be usually above the limit reference point.
- A limit reference point has been chosen for the exploitation rate that is appropriate for the species.
- Historical data indicate that the current exploitation rate is below the limit reference point.

# Criterion 1.2

S 13 of the Zealand Fisheries Act 1996 provides for any stock whose current level is below that which can produce the Maximum Sustainable Yield (MSY) to be rebuilt to that level. The Act requires the rate of rebuild will occur within a period appropriate to the stock and its biological characteristics. Currently hoki stocks are not considered to be below MSY, and therefore a rebuild strategy is not required at this time.

# Criterion 1.3

#### Indicator 1F: There is adequate knowledge about the target stock being fished The intent of this performance indicator is to evaluate the extent to which there is sufficient knowledge about age, genetic structure, sex composition and reproductive capacity of the stock.

Elements considered in scoring include:

- 1. There is adequate knowledge of the age, genetic structure, sex composition and reproductive capacity of the stock;
- 2. There is adequate knowledge about the reproductive capacity (fecundity, spawning aggregations, age structure) of the target species; and
- 3. There is adequate spatial and temporal information on trends in abundance of the spawning stock.

#### 100 Scoring Guidepost

- There is comprehensive knowledge of the age class, sex composition and genetic structure of the population;
- There is comprehensive knowledge of the reproductive capacity;
- Comprehensive, fishery independent surveys of spawning stock size are available over a substantial period of time and space of the fishery.

- Reliable estimates are available of the spatial structure, age class distribution and sex composition of the population which is used to evaluate the reproductive capacity of the stock;
- Reliable fishery independent estimates of reproductive capacity are available (or fishery dependent estimates have been shown to be reliable);
- The reproductive capacity is known of the main fishing grounds.



# 60 Scoring Guidepost

- Estimates are available of the age class distribution and sex composition of the population which is used to evaluate the reproductive capacity of the stock;
- The fishery has a time series of catch data;
- The sex and size structure of the catch has been estimated;
- Estimates of spawning stock size have been conducted.

# Indicator 1G: There is adequate knowledge about the fishery

#### The intent of this performance indicator is to evaluate the extent to which fishing has an impact on the reproductive capacity of the target species.

Elements considered in scoring include:

- 1. There is adequate spatial and temporal monitoring of catch, effort, age and sex composition;
- 2. There is adequate spatial and temporal information on fishing patterns;
- 3. There is adequate spatial and temporal information on fishing methods (gear selectivity, changes in catchability).

#### 100 Scoring Guidepost

- There are comprehensive data available at fine spatial and temporal resolution on fishing effort in all sectors and on catch, effort, incidental mortality, age and sex composition from all fishing methods.
- There is an independent at-sea observation program to measure discarding, incidental mortality and document fishing practices.
- Research programs have established gear selectivity and key determinants of catchability including, where relevant, environmental influences and changes in fishing technology and practices in relation to age and sex composition of the fish population.

#### 80 Scoring Guidepost

- Total annual catch and effort and sex composition by fishing methods are known for the major spatial zones of the fishery. Reliable data are available to estimate the size composition of the discards.
- There is an independent at-sea observation program to measure discarding and document fishing practices.
- Gear selectivity of fishing methods is known.
- Reliable estimates of age/size composition are used in stock assessments.

- Total annual catch and effort by fishing methods are known for the major spatial zones of the fishery.
- Gear selectivity is included in the fishery stock assessments.
- Catchability (in relation to reproductive capacity) is considered for stock assessments and used if required.



# Indicator 1H: There is a well-defined and effective strategy to manage the target stocks.

The intent of this performance indicator is to evaluate the extent to which there is a well-defined and effective strategy in place to ensure the effects of the fishery on the genetic structure, age and sex composition of the fish population do not impair reproductive capacity.

Elements considered in scoring include:

- 1. Age, sex and genetic structure are involved in the stock assessment;
- 2. Reproductive capacity and spawning stock are involved in the stock assessment;
- 3. Management tools (input and/or output controls) are specified and appropriate; and
- 4. The current status of the reproductive capacity of the population is known;

# 100 Scoring Guidepost

- There is an explicit and precautionary strategy in place for management of the target species.
- The strategy specifies monitoring and stock assessment methods, and agreed rules for setting management measures on the basis of assessments.
- Catch levels are appropriate to the reproductive capacity of the resource.
- Assessment advise is implemented and action is timely and no evidence exist that reproductive capacity is impaired.

# 80 Scoring Guidepost

- There is a harvest strategy in place to manage the catch and effort in relation to the fishery reproductive capacity.
- The strategy is adaptive, and management measures are set on the basis of robust estimates of reproductive capacity.
- When the reproductive capacity of the fishery is recognised to be impaired then a precautionary and timely management response is invoked.

#### 60 Scoring Guidepost

- There is a basic harvest strategy to manage catch and effort in relation to the fishery reproductive capacity.
- The strategy is adaptive, and management measures are set on the basis of estimates of reproductive capacity.

# **Principle 2**

# Criterion 2.1

Indicator 2A: There is adequate knowledge of the ecosystem and its value where the fishery operates

The intent of this performance indicator is to enable an evaluation of the extent to which there is sufficient knowledge of the ecosystem and of the natural functional relationships between species so that the fisheries management system can



# determine the nature of the effects of fishing on the ecosystem. This includes the extent to which there is a sufficient and appropriate process that operates to gather such knowledge.

Elements considered in scoring include:

- 1. Information on the distribution of habitats and major assemblage types in relation to the distribution is available to the fishery;
- 2. Information on the species diversity, populations structures and the natural functions and trophic relationships among species throughout the fishery areas is available;
- 3. The distribution of protected species are well-known, together with the nature and distributions of their critical habitats;
- 4. Knowledge of the natural variability in the ecosystem is adequate, included the natural physical forcing factors such as dominant currents, seasonal patterns in oceanographic conditions.

# 100 Scoring Guidepost

- The major habitat types have been determined and mapped across the areas where the fishery operates, using a comprehensive biophysical habitat classification.
- There is comprehensive comparative data with non-fished but otherwise comparable ecosystems on species diversity, population structures and the natural trophic relationships among species.
- The dominant natural large-scale factors responsible for structuring the marine ecosystems and their composition are known the dominant ecological effects of the major ocean currents, have been defined.
- The nature, spatial and temporal extent of natural variation in the ecosystem is understood.

#### 80 Scoring Guidepost

- There is knowledge of the major types of habitat in the area of the fishery, and aspects of their distribution.
- Research has been or is being undertaken on the predators and prey of the target species.
- There is knowledge of the natural variability in the ecosystem, including natural physical forcing factors such as dominant currents and seasonal patterns in oceanographic conditions.

#### 60 Scoring Guidepost

- There is knowledge of the major types of habitat in the area of the fishery.
- Research initiatives have been or are being identified on the predators and preys of the target species, trophic relationships and the natural variability in the ecosystem.

# Indicator 2B: The fishery is conducted in a manner that does not have unacceptable impacts on protected, threatened, endangered or highly valued icon species

The intent of this performance indicator is to evaluate the extent to which the fishery has unacceptable impacts on protected, threatened, endangered or highly valued icon species, and particularly those identified for protection under New Zealand legislation.

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Elements considered in scoring include:

- 1. Information on the direct interactions of the fishery with protected, threatened, endangered or highly valued icon species, such as through by-catch, entrainment, effects on behaviour, or physical disruption of seabird and sea mammal populations is available;
- 2. Information on the extent of interruptions, removals, moralities of protected, threatened or endangered and highly valued icon species caused by the fishery is available.
- 3. Levels of incidental mortality of protected, threatened, endangered and highly valued icon species do not have unacceptable impacts on their populations.

# 100 Scoring Guidepost

- The extent of potential risks from fishing gear on the ecosystems, habitats and species that occur in the fished areas have been studied in detail and quantified, including the nature of any irreversible changes.
- The extent of potential risks from fishing operations on the ecosystems, habitats and species that occur in the fished areas have been studied in detail and the risks are quantified, including the nature of any irreversible changes.
- The levels of incidental mortality of protected, threatened, endangered and highly valued icon species do not have detrimental impacts on their populations.

#### 80 Scoring Guidepost

- There is adequate knowledge of the types of fishing gear used, and the extent and location of their use.
- There is adequate knowledge of fishing practices, including levels and types of bycatch and discards.
- There is adequate knowledge of lost gear and disposable wastes.
- The levels of incidental mortality of protected, threatened, endangered and highly valued icon species do not have unacceptable impacts on their populations.

#### 60 Scoring Guidepost

- There is knowledge of the types of fishing gear used, and the extent and location of their use.
- There is knowledge of fishing practices, including levels and types of bycatch and discards.
- There is knowledge of lost gear and disposable wastes.
- Issues are identified and trials are underway to reduce levels of incidental mortality on protected, threatened, endangered and highly valued icon species and related impacts on their populations.

# Indicator 2C: An ecological risk assessment has been conducted to determine the potential impacts of the fishery on the environment

The intent of this performance indicator is to evaluate the extent to which there are robust assessments or prediction of impacts of the fishery, and if they are based on reliable knowledge methods for estimating risks, inferring or detecting ecological changes. This includes the use of specific gear type, the nature and extent of bycatch, fishing deployment techniques, discarded consumables, gear loss at sea,



# potential introduction of pest species, the impacts of discards and waste, and the disturbance to natural behaviour of species.

Elements considered in scoring include:

- 1. There have been studies of, or assessment of, the impacts in space and time of the fishery on the ecosystem;
- 2. Impact detection and assessment is based on appropriate ecological understanding, on assumptions, sampling designs and inferential models that are appropriate, and uses spaces and time scales that are ecologically relevant;
- 3. The cause-effect models used in experimental studies to evaluate the nature of fishery impacts are appropriate, including their ecological, toxicological and statistical basis;
- 4. The natural dynamics of the ecosystem is adequately accounted for in determining the fishery-based impacts;
- 5. Factors outside the fishery management system that can have an impact on the fishery or the ecosystem are adequately considered in determining fishery-based impacts;
- 6. There is knowledge of the potential for effects of the type of gear, or fishery operations on the ecosystem, habitats and species that occur within the fished areas;
- 7. There is adequate knowledge of thresholds for acceptable levels of effect of the fishery on key ecosystem indicators, and of the potential for ecosystems, habitats and species that occur within the fished areas to recover after fishing (or the fishery activity) has been removed.

# 100 Scoring Guidepost

- The effects of the fishery have been determined by detailed, peer reviewed comparative studies between fished and non-fished but otherwise comparable ecosystems, across large space and time scales, using precautionary threshold levels of effect of the fishery for a broad range of ecological attributes/indicators.
- Studies of causes and effects in the fishery are comprehensive across habitats and regions and use ecologically relevant attributes and statistically robust designs.
- The impact-detection designs include space and time across a range of scales.
- The impact-detection designs include and control for the effects of factors outside the fishery in determining fishery impacts.

#### 80 Scoring Guidepost

- There has been a comprehensive and peer-reviewed evaluation of the risks posed by the fishery to the ecosystem (ecological risk assessment), based on existing information.
- Such an evaluation is based, where possible, on information from fished versus unfished areas.
- Key ecological risks are identified and prioritised for appropriate action within the fisheries management system.

#### 60 Scoring Guidepost

An ecological risk assessment has been conducted.



Indicator 2D: The impact of lost fishing gear or lost consumables or disposed waste on target or non-target species is not unacceptable

The intent of this performance indicator is to evaluate the extent to which fishing gear and waste materials (such as processing waste and other consumables) that are lost at sea have an impact on the target or non-target species.

Elements considered in scoring include:

- 1. Information of the extent of lost fishing gear and its effects on the populations of target and non-target species, and any physical habitat damages is available;
- 2. Information of the loss of processing and consumable wastes, their effects on the populations of target and non-target species is available, and any physical habitat damage is available.

#### 100 Scoring Guidepost

- The nature of gear, consumables, and operational/processed waste has been measured and assessed across the fishery, and the extent of impacts has been measured and shown to be a negligible threat to habitats, marine ecosystems or species of concern that may be susceptible (e.g. seabirds, sharks, marine mammals, deepwater corals).
- A program for waste minimisation should be operational and is effective.

#### 80 Scoring Guidepost

- The extent of gear and consumable loss from the fishery has been estimated in at least one area, and gear or consumable loss from the fishery is not cited as a threatening, or potentially threatening, process in any formally implemented species management or recovery plans.
- A program for waste minimisation should be operational.

#### 60 Scoring Guidepost

• A program for waste minimisation should be operational.

Indicator 2E: The fishery does not have unacceptable impacts on the ecosystem structure or function, on habitats or on the populations of dependent or otherwise associated species

The intent of this performance indicator is to evaluate the extent to which the fishery has unacceptable impacts on important aspects of the ecosystems, habitats or associated species, where it operates.

Elements considered in scoring include:

- 1. The effects of the removal of target species biomass on populations of species that depend on it as food source;
- 2. The effect of the removal of target species biomass on populations of species that it consumes as food;
- 3. The effects of the fishery on the habitat structure, productivity and species diversity/interactions in fished areas;
- 4. The effects of by-catch (including quoted species), discarded species, including the target species, on trophic structure and dynamics, species diversity and productivity in fished areas.



#### 100 Scoring Guidepost

- In the major fishing areas, and across a representative sample of occasionally fished areas, the impacts of fishing on the distributions or abundance of the populations of the main prey and the predators of the target species are within acceptable limits.
- In the main habitats, the impacts of fishing on structure, productivity and species diversity have been assessed and are within defined limits.
- Effective measures are put in place to prevent any further fishing by individual companies once the ITQ of non-target quoted species has been reached.

#### 80 Scoring Guidepost

- No unacceptable impacts of the fishery on ecological systems have been demonstrated.
- Where specific impacts have been studied, the impacts are contained within acceptable limits.
- Research programs are investigating the impacts of the fishery on the main habitats and the main predators and prey of the target species.
- Research programs are attempting to identify acceptable limits to change for ecological impacts on key habitats and species.
- Disincentives are in place to prevent any further fishing by individual companies once the ITQ of non-target quoted species has been reached

#### 60 Scoring Guidepost

- The ecological impact issues in the fishery have been identified.
- Specific mitigation programmes have been initiated to address impacts.

# Indicator 2F: Precautionary strategies are employed in the fisheries management system to address and restrain the impacts of the fishery on the ecosystem

The intent of this performance indicator is to evaluate the extent to which the fisheries management system includes an appropriate, precautionary set of strategies designed to restrain and reduce any important impacts of the fishery on the natural functional relationships between ecosystem species.

Elements considered in scoring include:

- 1. Ecological objectives for habitats and populations have been developed and acted upon.
- 2. The levels of unacceptable impact have been identified for a range of habitats and nontarget species in fished areas.
- 3. Monitoring programs designed to assess fishery impacts are operational.
- 4. Fishery management measures are in place to enable adjustment of fishery practices where unacceptable impacts have been identified.

- Management objectives and strategies designed to adequately protect ecosystems, habitats and populations from degradation are included as environmental objectives in the fisheries management plan.
- Fisheries operations use the objectives and limits for environmental change to guide operational practices.



 Variables related to ecosystems, habitats and populations of non-target species are included within the fisheries monitoring program and in the management plan, and these data are used to guide and revise fishery management practices.

# 80 Scoring Guidepost

- The fisheries management system includes management objectives and strategies for key aspects of the ecosystem, including habitats and species diversity where potential impacts of the fishery have been identified.
- The fisheries management system has the appropriate arrangements to adjust fishery operations if adverse ecological impacts of the fishery are detected.

# 60 Scoring Guidepost

- The fisheries management system includes elements to identify and address environmental issues.
- The fisheries management system has the capacity to act upon environmental issues.

# Criterion 2.2

Indicator 2G: There is adequate knowledge of the ecosystem and its value where the fishery operates in relation to protected, endangered, threatened or icon species The intent of this performance indicator is to enable an evaluation of the extent to which there is sufficient knowledge of the protected, endangered, threatened or icon species and of the natural functional relationships between species so that the fisheries management system can determine the nature of the effects of fishing on the protected, endangered, threatened or icon species. This includes the extent to which there is a sufficient and appropriate process that operates to gather such knowledge.

Elements considered in scoring include:

- 1. The distribution and conservation status of protected, endangered, threatened or icon species are well-known, together with the nature and distributions of their critical habitats;
- 2. Knowledge of the natural variability in the ecosystem is adequate, included the natural physical forcing factors such as dominant currents, seasonal patterns in oceanographic conditions.
- 3. Information on the direct interactions of the fishery on protected, threatened, endangered and highly valued icon species, such as through by-catch, entrainment, effects on behaviour, or physical disruption of seabird and sea mammal populations is available;
- 4. Information on the extent of interruptions, removals, mortalities of protected, threatened, endangered and highly valued icon species caused by the fishery is available.

# 100 Scoring Guidepost

 The distributions of protected, threatened, endangered or icon species and the habitats upon which they depend have been identified and mapped including an assessment of temporal variability.



 There is comprehensive comparative data on endangered, threatened, protected or icon species in relation to breeding and migration patterns, natural trophic relationships among species.

# 80 Scoring Guidepost

- The presence and distribution of protected, threatened, endangered or icon species in the area of the fishery is known.
- There is knowledge of the major species and their habitats in the area of the fishery, and aspects of their distribution.
- Research has been or is being undertaken on the relationships between the threatened, endangered, protected or icon species of the hoki.

# 60 Scoring Guidepost

- The presence of protected, threatened, endangered or icon species in the area of the fishery is known.
- Research has been or is being undertaken on the relationships between the threatened, endangered, protected or icon species of the hoki.

# Indicator 2H: An ecological risk assessment has been conducted to determine the potential impacts of the fishery on the genetic, species and population level biodiversity of the protected, endangered, threatened or icon species

The intent of this performance indicator is to evaluate the extent to which there are robust assessments or prediction of impacts of the fishery on protected, endangered, threatened or icon species, and if they are based on reliable knowledge methods for estimating risks, inferring or detecting ecological changes. This includes the use of specific gear type, the nature and extent of by-catch, fishing deployment techniques, discarded consumable, gear lost at seas, potential introduction of pest species, the impacts of discards and waste and the disturbance to natural behaviour of species.

Elements considered in scoring include:

- 1. There have been studies of, or assessment of, the impacts in space and time of the fishery on the endangered, threatened, protected or icon species;
- 2. Impact detection and assessment is based on appropriate ecological understanding, on assumptions, sampling designs and inferential models that are appropriate, and uses spaces and time scales that are ecologically relevant;
- 3. The cause-effect models used in experimental studies to evaluate the nature of fishery impacts are appropriate, including their ecological and statistical basis;
- 4. The natural dynamics of the endangered, threatened, protected or icon species is adequately accounted for in determining the fishery-based impacts;
- 5. Factors outside the fishery management system that can have an impact on the fishery or the ecosystem are adequately considered in determining fishery-based impacts;
- 6. There is knowledge of the potential for effects of the type of gear, or fishery operations on the habitats and endangered, threatened, protected or icon species;
- 7. There is adequate knowledge of potential for endangered, threatened, protected or icon species that occur within the fished areas to recover after fishing (or the fishery activity) has been removed (reversibility of the effects).



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# 100 Scoring Guidepost

- The effects of the fishery on endangered, threatened, protected or icon species has been conducted in a risk assessment in between fished and non-fished areas with involvement of all stakeholders.
- The impact-detection designs include space and time across a range of scales.
- The impact-detection designs include and control for the effects of factors outside the fishery in determining fishery impacts.

# 80 Scoring Guidepost

- There has been a risk assessment of the fishery on the endangered, threatened, protected or icon species.
- Such an evaluation is based, where possible, on information from fished versus unfished areas.

# 60 Scoring Guidepost

• There has been a risk assessment of the fishery on the endangered, threatened, protected or icon species.

Indicator 2I: The impact of lost fishing gear or lost consumables or disposed waste on endangered, threatened, protected or icon species is not unacceptable

The intent of this performance indicator is to evaluate the extent to which fishing gear and waste materials (such as processing waste and consumables) that are lost at sea have an impact on the endangered, threatened, protected or icon species.

Elements considered in scoring include:

- 1. Information of the extent of lost fishing gear and its effects on endangered, threatened, protected or icon species, and any physical habitat damages is available;
- 2. Information of the loss of processing and consumable wastes, their effects on endangered, threatened, protected or icon species is available, and any physical habitat damage is available.

#### 100 Scoring Guidepost

- The nature of gear, consumables, and operational/processed waste has been measured and assessed across the fishery, and the extent of impacts has been measured and shown to be a negligible threat to endangered, threatened, protected or icon species.
- An effective waste program for minimisation of effects on endangered, threatened, protected or icon species should be operational.

- The extent of gear and consumable loss from the fishery has been estimated in at least one area, and gear or consumable loss from the fishery is not cited as a threatening, or potentially threatening, process in any formally implemented species management or recovery plans.
- A waste program for minimisation of effects on endangered, threatened, protected or icon species should be operational.



- The extent of gear and consumable loss from the fishery has been estimated in at least one area, and gear or consumable loss from the fishery is not cited as a threatening, or potentially threatening, process in any formally implemented species management or recovery plans.
- A waste minimisation program should be operational.

# Indicator 2J: The fishery does not have unacceptable impacts on the endangered, threatened, protected or icon species and the associated ecosystem

The intent of this performance indicator is to evaluate the extent to which the fishery has unacceptable impacts on important aspects of the ecosystems, habitats of associated endangered, threatened, protected or icon species, where the fishery operates.

Elements considered in scoring include:

- 1. The effects of the removal of target endangered, threatened, protected or icon species biomass on species that depend on it as food source;
- 2. The effects of the fishery on the habitat structure, productivity of endangered, threatened, protected or icon species diversity/interactions in fished areas;
- 3. The interaction of by-catch, discarded species, including the target species, with the behaviour, dynamics, species diversity of the endangered, threatened, protected or icon species.

#### 100 Scoring Guidepost

- In the major fishing areas, the distributions and abundance of the endangered, threatened, protected and icon populations are within acceptable limits.
- In the main habitats, the impacts of fishing on the endangered, threatened, protected or icon species have been identified, described and assessed and, where necessary, corrective action has been undertaken.

#### 80 Scoring Guidepost

- No unacceptable impacts of the fishery on the endangered, threatened, protected or icon species and their habitats have been demonstrated.
- Where unacceptable impacts have been identified, adequate corrective actions are being undertaken.

- Research programs are investigating the impacts of the fishery on the main habitats and the endangered, threatened, protected or icon species.
- The ecological impact issues in the fishery on the endangered, threatened, protected or icon species have been identified.
- Specific mitigation programmes have been initiated to address impacts.



Indicator 2K: Strategies are employed in the fisheries management system to address and restrain the impacts of the fishery on the endangered, threatened, protected or icon species

The intent of this performance indicator is to evaluate the extent to which the fisheries management system includes an appropriate set of strategies designed to restrain and reduce any important impacts of the fishery on the endangered, threatened, protected or icon species and where necessary facilitate rebuilding of populations of ecologically related species including endangered, threatened, protected or icon species.

Elements considered in scoring include:

- 1. Area-based ecological objectives, for populations of endangered, threatened, protected or icon species and their habitats, have been developed and implemented.
- 2. The levels of unacceptable impact have been identified for endangered, threatened, protected or icon species and their habitats in fished areas.
- 3. Monitoring programs designed to assess fishery impacts on endangered, threatened, protected or icon species are operational.
- 4. Fishery management measures are in place to enable adjustment of fishery practices where unacceptable impacts on endangered, threatened, protected or icon species have been identified.

#### 100 Scoring Guidepost

- Management objectives and strategies designed to adequately protect endangered, threatened, protected or icon species from degradation are included as environmental objectives in the fisheries management plan.
- Fisheries operations use the objectives and limits to change of endangered, threatened, protected or icon species to guide operational practices.
- Variables related to endangered, threatened, protected or icon species are included within the fisheries monitoring program and in the management plan, and these data are used to guide and revise fishery management practices.

#### 80 Scoring Guidepost

- The fisheries management system includes management objectives and strategies for key aspects of the endangered, threatened, protected or icon species and their habitats where potential impacts of the fishery have been identified.
- The fisheries management system has the appropriate arrangements to adjust fishery operations if adverse impacts of the fishery on endangered, threatened, protected or icon species are detected.

- The fisheries management system includes elements to identify and address issues related to endangered, threatened, protected or icon species.
- The fisheries management system has the capacity to act upon issues related to endangered, threatened, protected or icon species.



# **Criterion 2.3**

Omitted as argued under Criterion 1.2.

# **Principle 3**

# Criterion 3.1: Fishery Management System

#### Indicator 3A: The management system recognises user rights

The intent of this performance indicator is to evaluate to the extent to which the management system recognises and reflects national and international obligations.

Elements considered in scoring include:

- 1. Observe the legal and customary rights and long term interest of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability;
- 2. The fishery shall not be conducted under a controversial unilateral exemption to an international agreement;
- 3. The fishery shall be conducted in a manner consistent with International Conventions and Agreements.

#### 100 Scoring Guidepost

- The management system is fully effective in the identification, acknowledgement and in addressing legal and customary rights and long term interests of stakeholders in the fishery and in the setting of the TAC and addressing environmental and cultural issues.
- The management system has to fully reflect all relevant international conventions and agreements in managing the fishery.

#### 80 Scoring Guidepost

- The management system identifies, acknowledges and addresses legal and customary rights and long term interests of stakeholders in the fishery and in the setting of the TAC and addressing environmental and cultural issues.
- The management system has to reflect the main elements of all relevant international conventions and agreements in managing the fishery.

- The interests of stakeholders in the fishery are taken into account in the setting of the TAC and addressing environmental and cultural issues.
- The management system has to reflect the major international conventions and agreements in managing the fishery.



# Indicator 3B: The management system has a clearly defined scope designed for a wellmanaged fishery

The intent of this performance indicator is to evaluate to the extent to which the fishery management system has an appropriate scope, content and process for a well-managed fishery.

Elements considered in scoring include:

- 1. Clear short and long-term objectives, including ecosystem objectives, consistent with a well-managed fishery;
- 2. A consultative process that is transparent and open to all interested and affected parties;
- 3. An appropriate mechanism for the resolution of disputes arising within the system;
- 4. Provide economic and social incentives that contribute to unsustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing;
- 5. Specific measures and strategies that demonstrably control the degree of exploitation of the resource in the light of the natural variation in ecosystems;
- 6. The extent to which the fishery is supported by research that is adequate and appropriate for the needs of a well-managed fishery

# 100 Scoring Guidepost

- Clear short and long-term objectives, including ecosystem objectives, that are consistent with a well-managed fishery;
- A consultative process that is transparent and open to all interested and affected parties;
- An appropriate mechanism for the resolution of disputes arising within the fishery management system;
- Where economic and social incentives are provided they do not lead to unsustainable fishing;
- Specific measures and strategies are in place to control the degree of exploitation of the resource;
- The fishery is supported by comprehensive research, data-capture and analysis activities in stock management, environmental dynamics and assessments of fishing on ecosystems and icon species that may be affected by the fishery.

# 80 Scoring Guidepost

- Short and long-term objectives, including ecosystem objectives, are consistent with a well-managed fishery;
- A consultative process is open to all interested and affected parties;
- A mechanism for the resolution of disputes arising within the fishery management system;
- Where economic and social incentives are provided they do not lead to unsustainable fishing.
- Specific measures and strategies are in place to control the degree of exploitation of the resource'
- Specific research projects are underway to address key uncertainties in management of the target species, management of ecosystem impacts of the fishery and management of potentially negative effects on icon species.

# 60 Scoring Guidepost

Short and long-term objectives are consistent with a well-managed fishery;



- A consultative process does exist for those parties affected by the fishery;
- Evidence exists of successful dispute resolution;
- Incentives have been evaluated to ensure that they do not lead to unsustainable fishing;
- Measures are in place to control the degree of exploitation of the resource;
- The fishery is supported by research projects that address key aspects of stock management.

#### Indicator 3C: The management system has a comprehensive scope of planning The intent of this performance indicator is to evaluate to the extent to which the management system has been developed on the basis of a comprehensive scope of planning.

Elements considered in scoring include:

- 1. Management plan is consistent with the spatial scale and intensity of the fishery;
- 2. The planning is appropriate to the cultural, social and environmental context of the fishery and is of precautionary nature.

# 100 Scoring Guidepost

- The management plan is fully consistent with the spatial scale and intensity of the fishery;
- The plan fully reflects cultural, social and environmental elements of the fishery and is of precautionary nature.

#### 80 Scoring Guidepost

- The management plan/system is consistent with the spatial scale and intensity of the fishery;
- The plan/system fully reflects cultural, social and environmental elements of the fishery and is of precautionary nature.

# 60 Scoring Guidepost

- The fishery operates under a system of management.
- The system of management reflects cultural, social and environmental elements of the fishery and is of precautionary nature.

#### Indicator 3D: The management system is implemented

The intent of this performance indicator is to evaluate to the extent to which the management system is being implemented by the fishery.

Elements considered in scoring include:

- 1. Does the fishery have a procedures manual/handbook;
- 2. Are the procedures being implemented;
- 3. Specific measures and strategies that demonstrably control the degree of exploitation of the resource.

# 100 Scoring Guidepost

The management system is implemented and fully effective.



The management system is implemented and effective.

#### 60 Scoring Guidepost

• The management system is implemented.

Indicator 3E: The management system has compliance and enforcement procedures The intent of this performance indicator is to evaluate to the extent to which the management system has efficient and effective compliance and enforcement procedures in place.

Elements considered in scoring include:

- 1. Are the procedures being adhered to;
- 2. 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.

#### 100 Scoring Guidepost

 The management system compliance and enforcement procedures are implemented and fully effective.

#### 80 Scoring Guidepost

 The management system compliance and enforcement procedures are implemented and effective.

#### 60 Scoring Guidepost

The management system compliance and enforcement procedures are implemented.

#### Indicator 3F: The management system has an effective monitoring system

The intent of this performance indicator is to evaluate to the extent to which the management system has a monitoring system that evaluates the performance of the fishery against its policy and objectives.

Elements considered in scoring include:

- 1. The monitoring program of the fishery;
- 2. The monitoring procedures of the fishery;
- 3. The monitoring results of the fishery.

#### 100 Scoring Guidepost

The management system includes a monitoring program that fully evaluates the performance of the fishery against its policy and objectives in a timely manner.

#### 80 Scoring Guidepost

 The management system includes a monitoring program that evaluates the performance of the fishery against its policy and objectives in a timely manner.



 The management system includes a monitoring program that evaluates the performance of the fishery against its policy and objectives.

#### Indicator 3G: The management system has an effective review system

The intent of this performance indicator is to evaluate to the extent to which the management system has a review system that is effective and timely.

Elements considered in scoring include:

- 1. Programme of internal assessment and review;
- 2. Programme of external assessment and review;
- 3. Guidelines for acting on assessment outcomes;
- 4. Research needs and funding.

#### 100 Scoring Guidepost

- The management system includes internal and external processes that fully review the fishery performance annually.
- The management system review outcomes are fully incorporated into the fishery management in a timely manner.
- Research needs, priority and funding are effectively reviewed on an annual basis.

#### 80 Scoring Guidepost

- The management system includes internal and external processes that fully review the fishery performance regularly.
- The management system review outcomes are incorporated into the fishery management in a timely manner.
- Research needs, priority and funding are adequately reviewed on an annual basis.

#### 60 Scoring Guidepost

- The performance of the fishery is regularly reviewed.
- Research needs, priority and funding are reviewed on an annual basis.

# 3.2 Criterion Fishery Operations

Indicator 3H: 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.

The intent of this performance indicator is to evaluate to the extent to which the management operations use fishing gear and practices that are designed to avoid the capture of non-target species.



Elements considered in scoring include:

- 1. Type of fishing gear;
- 2. The operational practices;
- 3. Incident reports:
- 4. Discards reports.

# 100 Scoring Guidepost

- There is an effective code of conduct for responsible fishing that is fully supported by . fishers.
- Fishing gear and operations are designed for minimum impact on non-target species and the ecosystem.
- An appropriate record system of incident and discard reports is in place.

# 80 Scoring Guidepost

- There is an education and awareness program for fishers concerning responsible fishing practices.
- Fishing is conducted in a way that attempts to reduce impacts on non-target species and the ecosystem.
- An appropriate record system of incident and discard reports is in place.

# 60 Scoring Guidepost

- There is an education and awareness program for fishers concerning responsible fishing practices.
- Development of a code of conduct is underway that attempts to reduce impacts on nontarget species and the ecosystem.

#### Indicator 3I: Implement appropriate fishing methods designed to minimise adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nurserv areas

The intent of this performance indicator is to evaluate to the extent to which the management operations are set up to minimise the impacts on habitats and in particular sensitive zones such as spawning and nursery areas.

Elements considered in scoring include:

- 1. The impacts of the various fishing techniques used by the fishery;
- 2. Records on the distribution of critical or sensitive habitats in the fishery;
- 3. Controls and guidelines on fishery operations.

- No intensely destructive fishing practices are used in this fishery.
- There is an effective code of conduct for responsible fishing that is fully supported by fishers.
- Fishing gear and operations are designed for minimum impact on critical or sensitive habitats.
- Controls on fishery operations in critical or sensitive habitats are highly precautionary.



# 80 Scoring Guidepost

- No intensely destructive fishing practices are used in this fishery.
- There is an education and awareness program for fishers concerning responsible fishing practices.
- Fishing is conducted in a way that attempts to reduce impacts on critical or sensitive habitats.
- There are defined controls on fishery operations in critical or sensitive habitats.

# 60 Scoring Guidepost

- No intensely destructive fishing practices are used in this fishery.
- There is an education and awareness program for fishers concerning responsible fishing practices.
- Critical or sensitive habitats have been identified and development of a code of conduct is underway that attempts to reduce impacts.

# Indicator 3J: Minimise operational waste

The intent of this performance indicator is to evaluate the extent to which the management operations minimise the disposal of waste (such as lost fishing gear, oil spills, on-board spoilage of catch and operational waste) generated by the fishery.

Elements considered in scoring include:

- 1. Type, quantity, location and frequency of lost fishing gear, oil spills, operational waste, sewage, plastics, etc.;
- 2. Management of unwanted catch of target species.
- 3. Management of unwanted by-catch of non-target species.

# 100 Scoring Guidepost

- Operational wastes are not disposed at sea by the fishery.
- Accidental losses of fishing gear are minimised by highly precautionary fishing practices.
- Full documented utilisation of all target fish species catch.

# 80 Scoring Guidepost

- Operational wastes are at defined low levels, and plans to minimise them are supported by fishers.
- Accidental losses of fishing gear are minimised by sound fishing practices.
- Disposal at sea of target fish species catch is at defined and acceptable low levels.

# 60 Scoring Guidepost

- A program to minimise operational waste and gear loss is in place.
- A program to minimise disposal of target fish species is in place.

# Indicator 3K: The fishery operations are conducted in compliance all legal and administrative requirements

The intent of this performance indicator is to evaluate the extent to which the fishery operations operate within the legal and administrational requirements applicable to the fishery.



Elements considered in scoring include:

- 1. Legislation requirements of all relevant acts;
- 2. Codes of Practice.

#### 100 Scoring Guidepost

 There is a very high level of compliance with all legislative requirements and agreed management arrangements and measures.

#### 80 Scoring Guidepost

 There is an adequate level of compliance with all legislative requirements and agreed management arrangements and measures.

#### 60 Scoring Guidepost

• The fishery operation complies with all legislative requirements.

Indicator 3L: The fishery operation assists and co-operates with management authorities in the collection of catch, discard and other information of importance for the effective management of the resource and the associated ecosystem The intent of this performance indicator is to evaluate the extent to which the fishery operations are assisting with the collecting of data for the benefit of the fishery.

Elements considered in scoring include:

- 1. Data collection by the fishery;
- 2. Distribution of collected data to appropriate authorities.

#### 100 Scoring Guidepost

- Fishers are significantly involved in the collection of appropriate data.
- The distribution of collected data to appropriate authorities is conducted in a timely manner.
- Voluntary information provided by the fishermen is monitored and occasionally collated and analysed alongside other information sources for the fishery.

#### 80 Scoring Guidepost

- Fishers are actively involved in the collection of appropriate data.
- The distribution of collected data to appropriate authorities is conducted.

#### 60 Scoring Guidepost

Fishers are involved in the collection of appropriate data.