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Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas

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1.0 Introduction

Benthic ecosystems are essential components of Canada's oceans environments. They provide

habitat, support food webs and are an important source of biodiversity. They also support many aquatic species that play an important social, cultural and economic role in the lives of many Canadians.

Recognizing the ecological and biological value of benthic ecosystems and their role in supporting aquatic species that Canadians depend on, it is imperative that these ecosystems are considered when managing oceans activities, including the harvest of fisheries resources. This includes the consideration of target species, non-target species, the ecosystems of which they are a part and the impact of fishing on these ecosystems when making management decisions. This is the basis of an ecosystem approach to fisheries management, which, along with a precautionary approach, is key to the emerging sustainable development framework of Fisheries and Oceans Canada (DFO).

Consistent with the Food and Agricultural Organization Code of Conduct for Responsible Fishing, DFO will continue to promote responsible fishing that helps to reduce by-catch and mitigate impacts to habitat anywhere it's biologically justified and cost effective.

Canada is also committed, under UN Resolution 61/105, to provide enhanced protection to marine habitats that are particularly sensitive. This policy is about managing fisheries in such sensitive benthic areas. It describes how these areas are identified and the nature of that protection that will be given to them.

This Policy is guided by the legal and policy framework designed to deliver the management of Canada's fisheries and oceans resources, including the *Fisheries Act*, the *Oceans Act*, and the *Species at Risk Act*, the Oceans Action Plan, and the New Emerging Fisheries Policy, as well as Canada's commitments under several international agreements governing the fisheries and oceans, including the *United Nations Convention on the Law of the Sea*, the *Convention on Biological Diversity*, and the *United Nations Fisheries Agreement*.

The conclusions of the **Canadian Science Advisory Secretariat Report CSAS SAR 2006/025** also contributed to the basis of this Policy.

Improving our knowledge of the location and type of benthic ecosystems can be a challenge due to the vastness of Canada's Pacific, Atlantic and Arctic areas. This is a particular concern for frontier benthic ecosystems that have not been exposed to fishing activity.

Frontier areas may be home to several species that could support sustainable harvests. Harvesting these species could provide an additional or alternative source of income to Canada's fishing communities. However, frontier areas require special considerations in managing the risks posed by fishing activities in these areas. The higher level of scientific uncertainty about benthic habitats, communities, and species (including the intended target species in the fisheries) in these frontier areas, coupled with the fact that the greatest impacts to benthic habitats, communities and species to the extent they may exist in a given area are often caused by the first few fishing events justifies more precaution in managing fishing activities in these areas. As a result, a higher level of risk aversion will be applied in frontier areas.

While it is recognized that all benthic habitat, communities and species play a role in aquatic ecosystems, some benthic areas are considered more important from a biological and ecological perspective. At the same time, some benthic habitat, communities and species are more resilient than others to human activities, such as fishing.

A number of Canada's aquatic areas have a history of exposure to fishing activity. The fishing activity in these historically fished areas is subject to various rules laid out in the *Fisheries Act*, regulations, through licence conditions and identified in management plans, such as Integrated Fisheries Management Plans (IFMPs), to promote the sustainability of fisheries. An IFMP is a planning tool designed to outline key characteristics of a fishery, including stock status, fisheries management objectives and monitoring and enforcement issues. Among the rules outlined in

IFMPs are data collection requirements, which inform scientists and fisheries managers about conditions affecting the fishery. Existing stakeholder advisory processes set up to establish management measures, including management plans such as IFMPs, for a given fishery will constitute a central element of the procedure for implementing this Policy. Depending on the degree of certainty of the presence of sensitive benthic habitat, a higher level of risk aversion will also be applied to areas that have not been fished by the specific gear type proposed in a given historically fished area, or when the historically fished area has not been fished in a number of years and partial or whole recovery from the impact caused by past fishing activity may have occurred.

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2.0 Purpose and Scope

2.1 Purpose

The purpose of this policy is to help DFO manage fisheries to mitigate impacts of fishing on sensitive benthic areas or avoid impacts of fishing that are likely to cause serious or irreversible harm to sensitive marine habitat, communities and species.

The Policy outlines processes for: 1. the assembling and collection of data and information on benthic habitat, communities and species; 2. the assessment of the data and information to determine the ecological and biological significance of the benthic features and to determine the risk of serious or irreversible harm the fishing activity may cause to these features; and 3. taking appropriate management decisions, using an ecosystem approach and precaution.

2.2 Scope

This national Policy applies to all commercial, recreational and Aboriginal fishing activities licenced and/or managed pursuant to the *Fisheries Act* and the *Coastal Fisheries Protection Act*, including fishing inside and outside of the Large Oceans Management Areas (LOMAs). The scope of this Policy also includes any such fishing activity licenced/or managed by the Government of Canada outside Canada's Exclusive Economic Zone.

Among other things, the Policy is guided by the principle that the fishery is a common property resource to be managed for the benefit of all Canadians, consistent with conservation objectives, the constitutional protection afforded Aboriginal and treaty rights, and the relative contributions that various uses of the resource make to Canadian society, including socio-economic benefits to communities.

The Policy is consistent with the legislation that guides the management of Canada's living aquatic resources and oceans-based activities, including: *the Department of Fisheries and Oceans Act*; *the Fisheries Act*; *The Oceans Act*; *the Coastal Fisheries Protection Act*; *the Canadian National Marine Conservation Areas Act* and *the Species at Risk Act*.

This Policy is complementary to the Government of Canada's *Federal Framework for the Protection of Sensitive Marine Areas from Activities within Canadian Jurisdiction*. It is to be applied in a manner that is consistent with the Government of Canada's integrated oceans management agenda as outlined in the *Oceans Action Plan* and processes associated with LOMAs identified under the *Oceans Action Plan*.

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3.0 Guiding Principles

This policy is guided by the following principles:

- An ecosystem approach, which considers all of the components of an ecosystem, including benthic populations, communities and habitat, and their linkages, is fundamental to the conservation and sustainable use of Canada's fisheries.
- Conservation of fisheries resources and fish habitat – defined as sustainable use that safeguards ecological processes and genetic diversity for present and future generations – is a key priority of fisheries management decision making.
- The precautionary approach is a fundamental component of an effective risk management strategy. It recognizes that if there is both high scientific uncertainty and a risk of serious or irreversible harm, a lack of adequate scientific information will not be used as a reason for failing to take, or for postponing, cost effective measures for the conservation or protection of fish or fish habitat that are considered proportional to the likely severity of the risk.
- Management decisions should be based on the best science available – where adequate scientific data are unavailable, efforts should be made to acquire such data;
- The fishery is a common property resource to be managed for the benefit of all Canadians, consistent with conservation objectives, the constitutional protection afforded Aboriginal and treaty rights, and the relative contributions that various uses of the resource make to Canadian society, including socio-economic benefits to communities.
- Benthic ecosystems support aquatic species that play an important social, cultural and economic role in the lives of Canadians and others.
- Not all benthic areas require equal levels of protection, as not all areas are equally ecologically or biologically significant or vulnerable to particular stressors.
- Shared stewardship is an important part of managing Canada's fisheries resources. As such the Department will promote collaboration, participatory decision-making and shared responsibility with resource users and other stakeholders.
- Integrated management is an essential aspect of ensuring commercial and non-commercial interests are considered in the planning and management of oceans activities, such as fishing.
- Management decisions should also take it into consideration, as may be available, Aboriginal traditional knowledge and other local and traditional knowledge.

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4.0 Description of Process

Ongoing fishing activities in historically fished areas will be managed to address impacts of fishing on sensitive benthic areas through existing processes, including the advisory processes in place for the given fishery, following these five (5) steps. The management of proposed new fishing activities in frontier areas will be addressed through a separate procedure, also using these five (5) steps.

To avoid serious or irreversible harm to sensitive benthic habitat, species and communities and otherwise address impacts to benthic habitat, communities and species, this policy uses the following process:

1. Assemble and map existing data and information that would help determine the extent and

location of benthic habitat types, features, communities and species; including whether the benthic features (communities, species and habitat) situated in areas where fishing activities are occurring or being proposed are important from an ecological and biological perspective;

2. Assemble and map existing information and data on the fishing activity;
3. Based on all available information, and using the Ecological Risk Analysis Framework, assess the risk that the activity is likely to cause harm to the benthic habitat, communities and species, and particularly if such harm is likely to be serious or irreversible;
4. Determine whether management measures are needed, and implement such management measures; and,
5. Monitor and evaluate the effectiveness of the management measure and determine whether changes are required to the management measures following this evaluation.

These steps are to be applied in accordance with the process laid out herein for historically fished and frontier areas.

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5.0 Data and Information Assembling and Collection

Existing data and information from all available sources will need to be assembled and reviewed to determine the type and location of benthic features where fishing activities occur or are being proposed. This includes data and information collected by fisheries, research surveys and from other sources, including from other federal government departments, other governments, non-governmental organisations, academia and available aboriginal traditional knowledge and other sources of local and traditional knowledge.

Information and data should include information regarding the ecological and biological components of the benthic features with a view to determine their significance, information as to where fishing has occurred, is occurring, or is proposed to occur, and information necessary to determine the likely effects of the proposed or existing fishing activities on these benthic features.

Where such data and information do not exist or are insufficient to ascertain the ecological and biological characteristics of a benthic area, or to assess its likely sensitivity to real or potential fishing activity, best efforts will be made to collect such information. All possible methods of collecting information may be considered, including through data collection requirements from industry, through DFO research surveys, through information collected by other federal government departments, other governments, non-governmental organisations, academia, or through collaborative efforts. Exploratory fisheries may be considered as a means for collecting information.

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6.0 Identification of Sensitive Benthic Areas and Risk Analysis

6.1 Process for Identification of Sensitive Benthic Areas

There are two steps necessary in order to identify sensitive benthic areas:

1. Determination of ecological and biological significance of the benthic area
2. Determination of sensitivity of the area or a portion of it to the proposed or ongoing fishing

activity (risk of serious or irreversible harm).

Areas that are ecologically and biologically important are those with features or structures that provide a particularly significant or essential biological or ecological function within the broader ecosystem.

There are several approaches that can be used to identify sensitive habitats, including scientific inference from other jurisdictions, available data sets and expert opinion. One approach is the Ecologically and Biologically Significant Area (EBSA) identification framework that has been developed by DFO and is now being applied to identify, assess and map EBSAs within LOMAs ecosystems. The EBSA identification framework uses five selected criteria to identify EBSA: uniqueness, aggregation, fitness consequences, resilience and naturalness. The EBSA identification framework is not an impact or a risk analysis. It is a set of criteria which, when applied to the best available information, allows for a consistent and objective evaluation of the relative ecological and biological significance of areas.

When existing or new data collected by the processes laid out in this Policy for historically fished and frontier areas indicates the likely presence of a sensitive benthic area, DFO, in collaboration with stakeholders, will consider various measures to help identify the ecological or biological significance of the benthic area and its resilience, using available tools, including the EBSA identification framework.

Merely detecting the presence of an ecosystem component that may be sensitive itself is not sufficient to identify a sensitive benthic area. That identification should be made on a case-by-case basis through application of relevant provisions of this policy. Not all benthic areas will require management measures especially targeted at protecting benthic features from fishing activities. The next step is to determine whether the benthic features are at risk of serious or irreversible harm to an ongoing or a proposed fishing activity. This determination requires a risk analysis of the fishing activity on the said benthic habitat, communities and species.

6.2 Risk Analysis

Using all available information, DFO will determine the likelihood of risk of serious or irreversible harm the fishing activity may have on an ecologically and biologically significant benthic area. The risk analysis will then be used to help determine appropriate action. The Ecological Risk Assessment Framework will be used to conduct this risk analysis.

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7.0 Management Decision-Making Process

Management decisions to address the impacts of fishing on benthic areas determined to be sensitive will be based on a precautionary approach, ecosystem considerations and will factor in socio-economic considerations. In particular, the need for mitigation measures and the nature of such measures will be determined based on balancing the need to protect the benthic habitat communities and species to ensure their continued contribution to the ecosystem, with the socio-economic benefits of the fishery.

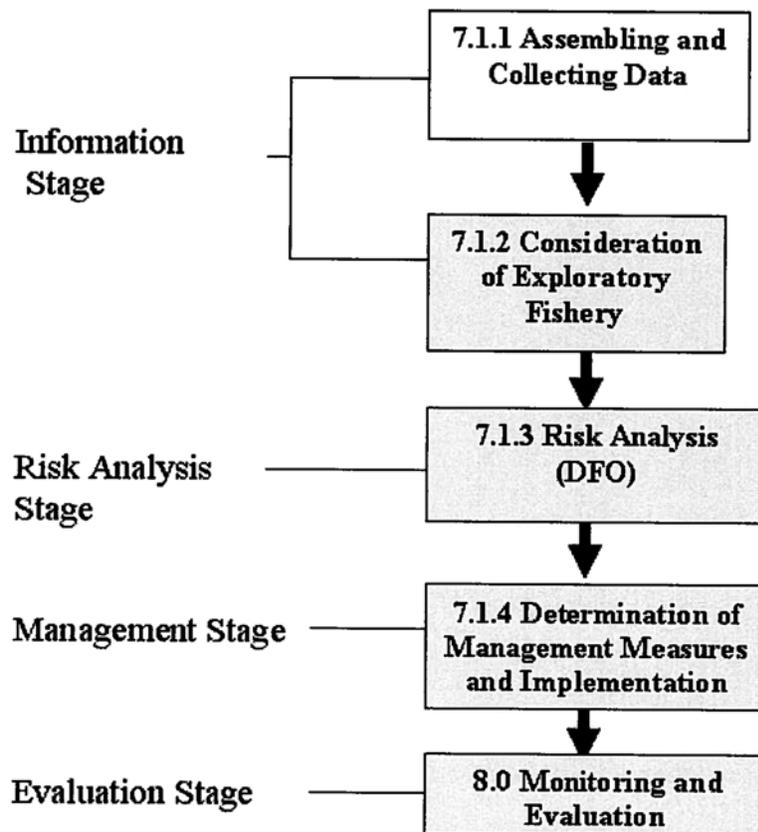
Ongoing fishing activities and proposals to expand fishing activities in historically fished areas will be processed through the management planning processes, including the stakeholder advisory processes in place for the given fishery. A separate process has been identified for the management of fishing activities in frontier areas where no management planning processes or stakeholders advisory processes exists. Development of this new process was guided and is meant to be consistent with the New Emerging Fisheries Policy of 2001.

DFO will be responsible for clearly delineating the boundaries of historically fished and frontier areas using available spatial information on fishing activity.

7.1 Frontier Areas

A Frontier Area is an area without a history of fishing in Canadian waters. This is interpreted to mean waters deeper than 2000m or areas of the Arctic where there is no history of fishing and little if any information is available concerning the benthic features (habitat, communities and species) and the impacts of fishing on these features.

The following section lays out the different stages to be followed in order for DFO to consider licensing of fishing activity in frontier areas. The entire process is as follows:



7.1.1 Information Assembling and Collection Stage

In accordance with the Scientific Report CSAS SAR 2006/025, the higher level of scientific uncertainty about benthic habitats communities and species in frontier areas, coupled with the fact that the greatest impact to the most vulnerable benthic habitats, communities and species in a given area can be caused by the first few fishing events justifies more precaution in managing fishing activities in these areas. Frontier areas require special considerations in managing the risks posed by fishing activities in these areas. In this respect, a stepwise approach is proposed for the management of such areas, where fishing activities are proposed for such areas.

As a first step, information and data available for the frontier area will be reviewed in light of current knowledge about effects of the proposed fishery. All possible methods of collecting

information may be considered, including through DFO research surveys, through information collected by other federal government departments, other governments, non-governmental organisations and academia. Exploratory fishing activity in these areas will be managed based on the need to acquire sufficient information to proceed in an informed and precautionary manner. Information collected will be evaluated and the results used in adaptive management, consistent with the precautionary approach.

7.1.2 Consideration of Exploratory Fishery

A) Review Process ---Proposal Protocol

When considering proposals for fisheries in frontier areas, DFO is committed to taking a collaborative approach that fully considers the health of sensitive benthic areas as well as the potential socio-economic benefits of new fishing activities.

Where there is insufficient information to ascertain the presence or sensitivity of benthic communities, species or habitat in frontier areas where a proposal for a fishery is made, or to assess the impacts of such fishing in such benthic area, and based on advice from the risk analysis of the proposed activity, DFO will consider allowing a carefully controlled small scale exploratory fishery as a means of identifying benthic habitat, communities and species, and determining the likelihood of impacts of fishing activity in the area and the economic viability of a commercial fishery.

To obtain a licence for an exploratory fishery in a frontier area, proponents are required to complete a detailed proposal and submit it to the Regional Director General of the appropriate DFO regional office. Where a proposal to fish in a frontier area is directed towards a species already subject to a management regime (e.g. TAC, quota or other effort restriction), the proposal may be submitted to the stakeholders advisory process in place. Proposals will be reviewed by DFO to determine the feasibility of an exploratory fishery and development of an exploratory fishery protocol.

If a proposal to fish in a frontier area is directed toward a species that is already subject to a management regime, the proponent must be a valid licence holder for the species with associated quota or effort restriction.

Proposals to fish in frontier areas should include all available information about the identified frontier area and the proposed fishery, including available scientific and available Aboriginal traditional knowledge and other local and traditional knowledge.

The proposal should include:

- Geographic coordinates of the proposed study area
- Physical Features, e.g. Oceanographic features (tidal mixing zones, convergence zone, polynyas, upwelling zones, topography, thermal hot vents etc.) where available
- Structural habitat features (e.g. deepwater corals, sponge reefs, macrophyte beds, etc.) where available
- Biological features (major forage species, major top fish predators, seabird and marine mammal populations, Threatened or Endangered species and species of Special Concern as assessed by Committee on the Status of Endangered Wildlife in Canada (COSEWIC), key primary and secondary plankton producers), where available
- Description of the proposed exploratory fishery

- Identify the target species/stock, fishing area and fishing method for which approval is requested;
- Provide a detailed plan outlining proposed fishing activities, e.g. applicable inspection requirements (CFIA), harvest level by management area, harvesting method to be used, vessel to participate, start-up time, duration of harvesting activity, number of sea days; depths and area to be fished; interactions with other fishing activities, etc.;
- Where the proposal is for an exploratory fishery involving a new species, the proposal should include the proposed processing and marketing strategies, including product forms, plants to be used and market destinations, as per the New emerging Fisheries Policy.
- Preliminary indication of how other species and/or the environment might be affected by the proposed fishery, based on current available knowledge, including:
- A Summary of current knowledge about the target species,
- An indication of how other (non-target) species might be affected by the proposed activity, with particular emphasis on SARA listed species, forage species, seabirds and marine mammals.
- Known information on benthic features (habitat, communities and species in the area); and
- Any mitigation measures proposed by the proponent, including consideration of coral avoidance strategy.

NOTA: All information contained in the proposal is for consideration only. Should a proposal proceed, the department may identify additional or different requirements.

NOTA: All information will be treated in a manner that respects the confidentiality rights of applicants.

B) Review of Proposals

The department will review proposals for new fisheries in frontier areas using the following process. DFO Regional Offices may establish specific guidelines providing more detailed procedures for processing proposals for fisheries in frontier areas, including exploratory fisheries, which are consistent with this Policy.

- Upon the receipt of a proposal for a new fishery in a designated frontier area, the Department will review it in light of currently available information. All applications/proposals will be reviewed to determine whether they meet all the requirements set out above;
- Incomplete or insufficiently detailed applications/proposals will either be returned with a request for further information or screened out;
- Applicants should be prepared to provide additional information upon request as well as sources of information whenever necessary;
- In reviewing the proposal, DFO will also take into consideration other sources of data on the area identified in the proposal, such as any information identified by LOMA processes, and information on the impacts of fishing on similar areas elsewhere. Sources include other research, other government departments, provincial governments, non-governmental organizations, academics, and, as may be available, Aboriginal traditional knowledge and other local and traditional knowledge;

- Where information is available to conduct a ecological risk analysis of the likely impacts of the fishery on the frontier area, such a review will be conducted before an exploratory fishery is allowed guided by the precautionary approach and ecosystem considerations. A report will be produced and contribute to the basis of future decisions respecting the exploratory fishery proposal.
- DFO will review all available information mentioned above, with a view to determine whether the exploratory fishery should proceed, and the conditions (protocol) under which the exploratory fishery may proceed.
- Specifically, the proposals will be assessed to determine:
 - The feasibility of an exploratory fishery with a view to obtaining information necessary to identify benthic habitat, communities and species in the area
 - The potential economic viability of a future fishery;
 - The likelihood of serious or irreversible harm the fishing activity may cause on the target and non-target resources, benthic features, and other vulnerable ecosystem components; and
 - The feasibility of deploying adequate monitoring, control and surveillance for the fishery.
- Proposals for exploratory fisheries in a frontier area targeted at a species already subject to a management regime will be submitted to stakeholder advisory process established by the management regime.
- DFO will review proposals on a case-by-case basis and in as timely a manner as possible.
- Proposals to direct for species that cross the boundaries of more than one region must be reviewed inter-regionally. The region (area) receiving the application is responsible for ensuring this coordinated review.
- In all cases Fisheries and Aquaculture Management, Oceans Habitat Management and Science in DFO Headquarters will be notified by a Region of each proposal that is received, and may choose to be engaged in any steps in the review.

C) Limited Exploratory Fishery - Protocol

Should a proposal receive approval to proceed to an exploratory fishery, the DFO Regional Office will work with the applicant to establish a protocol for the fishery. Where a proposal for an exploratory fishery in a frontier area is directed at a species already subject to a management regime and has been submitted to the relevant stakeholders advisory process for review, the stakeholders advisory process may develop a template protocol for such exploratory fisheries.

A decision to initiate an exploratory fishery will be made public, including the science-based review of the proposal, subject to reasonable protection of confidential commercial information.

All decisions, information and analysis will be shared with other DFO and Federal oceans programs, such as the LOMA program.

As a general rule, exploratory fishery protocols for frontier areas will require:

- A harvesting plan, including measures to mitigate or avoid damage to sensitive benthic habitat and communities that may be discovered during the exploratory fishery (including coral avoidance strategy), and minimize the by-catch of non-target species.

- Catch monitoring plan that includes full recording and reporting of all species caught, 100% vessel monitoring system and 100% observer coverage
- Area and effort restrictions commensurate with reasonable information required to conduct an assessment of the economic development benefits as well as a risk analysis of the activity;
- The exploratory fishery in a given area will not exceed 10% of the given frontier area open to the exploratory fishery;
- A protocol to be used for data collection to identify benthic areas and impact of fishing activities, broken down as follows: data collection, data analysis, data recording and report preparation. The protocol may require deployment of data collection instruments distinct from the gear used for fishing (e.g. underwater cameras). Such measures will be justified by DFO on the basis of risks and uncertainties regarding the impact of the fishery on ecosystem components and the costs implications for the proponent.
- Provisions for actions to be taken when a possible sensitive benthic ecosystem feature is encountered.

All costs for an exploratory fishery in a frontier area, including any specific data collection requirement, will be born by the applicant.

Exploratory fisheries will not commence until an exploratory fishery protocol has been approved by DFO and an exploratory fishery licence is issued to the applicant.

7.1.3 Risk Analysis (Identification of Sensitive Benthic Areas and Analysis of Risk)

Upon completion of the term of the exploratory fishery and no greater than one year after the beginning of the exploratory fishery, DFO will assess the data and other information collected in a timely fashion with a view to determine the next steps, including the appropriate management measures.

The DFO will:

1. Conduct a risk analysis using the Ecological Risk Analysis Framework and based on all data collected from fishing activity and all other relevant data and information from other available sources, on a scientific basis. Other available sources of data could include data from research by other government departments, provincial governments, non-governmental organizations, academics, and as may be available, Aboriginal traditional knowledge and other local and traditional knowledge. The risk analysis will provide information on the likelihood of serious or irreversible harm fishing may have on the sensitive benthic area and key ecosystem components and the level of harm and its reversibility, both in terms of magnitude and scale, if any. It will present and consider the implications of uncertainties that remain.

7.1.4 Determination of Management Measures and Implementation – DFO (Management Stage)

An adaptive and precautionary management approach will be used throughout the exploratory fishery phase and to determine the next steps following the first exploratory phase. A phased approach to expanding the fishery will be considered based on available information.

Decisions to open a new commercial fishery in a frontier area will be made by the Minister. In general, decisions to allow a commercial fishery in a frontier area and approval of management measures will be taken as outlined in the following process:

1. **Submission of Ecological Risk Analysis to an advisory process**
2. **Review of Ecological Risk Analysis by Advisory Process (Stakeholder Participation)**
3. **Development of options for Management Measures**
4. **Submission of recommendations to the Minister for decision**
5. **Implementation of Management Measures**

Taking into account the risk analysis, DFO will determine whether a commercial fishery should proceed in the defined area of the frontier area, the exploratory fishery should continue as is or in an amended form, or whether the fishery in the defined area or part thereof should be closed.

In accordance with a precautionary approach, a fishery may be allowed in a frontier area where there is a high degree of confidence that there will be no serious or irreversible harm to the sensitive benthic area. DFO will consider the ecological risk analysis and other available information, and balance the need to conserve fisheries resources and the protect sensitive benthic areas that may be present in the portion of the frontier area proposed for the fishery, with the socio-economic benefits that may be achieved from a fishery in the said area.

An integrated stakeholder advisory process will be established for the fishery, where none exist, with a view to seeking input from interested stakeholders and engage on sharing arrangements and management measures for the new fishery.

Management measures and their components may include:

- Substitution of another type of gear or modification of gears to reduce contact with the benthos and seafloor;
- Reduced effort;
- Spatial management of effort (taking into account the spatial distribution of benthic habitat and communities);
- Establishment of areas where use of certain gear type is not permitted
- Closures to all fishing;
- Where fishing has been permitted in areas where sensitive benthic habitats or species may be present, all activities will, by necessity, be subject to complete monitoring, control and surveillance. This will include vessel monitoring and at sea observer requirements.

In determining the appropriate management and mitigating measures, DFO will consider scientific advice and additional information provided by interested stakeholders. All decisions will recognize the importance of balancing the need to conserve the affected fisheries resources and protect the identified sensitive benthic areas with the socio-economic importance of the fishery.

As per the New Emerging Fisheries Policy, the exploratory licence holder or the commercial licence holder authorized to conduct an exploratory fishery in a frontier area will be given priority for a regular commercial licence in the given frontier area.

DFO will make its decision and the basis for the decision public.

7.2 Historically Fished Areas

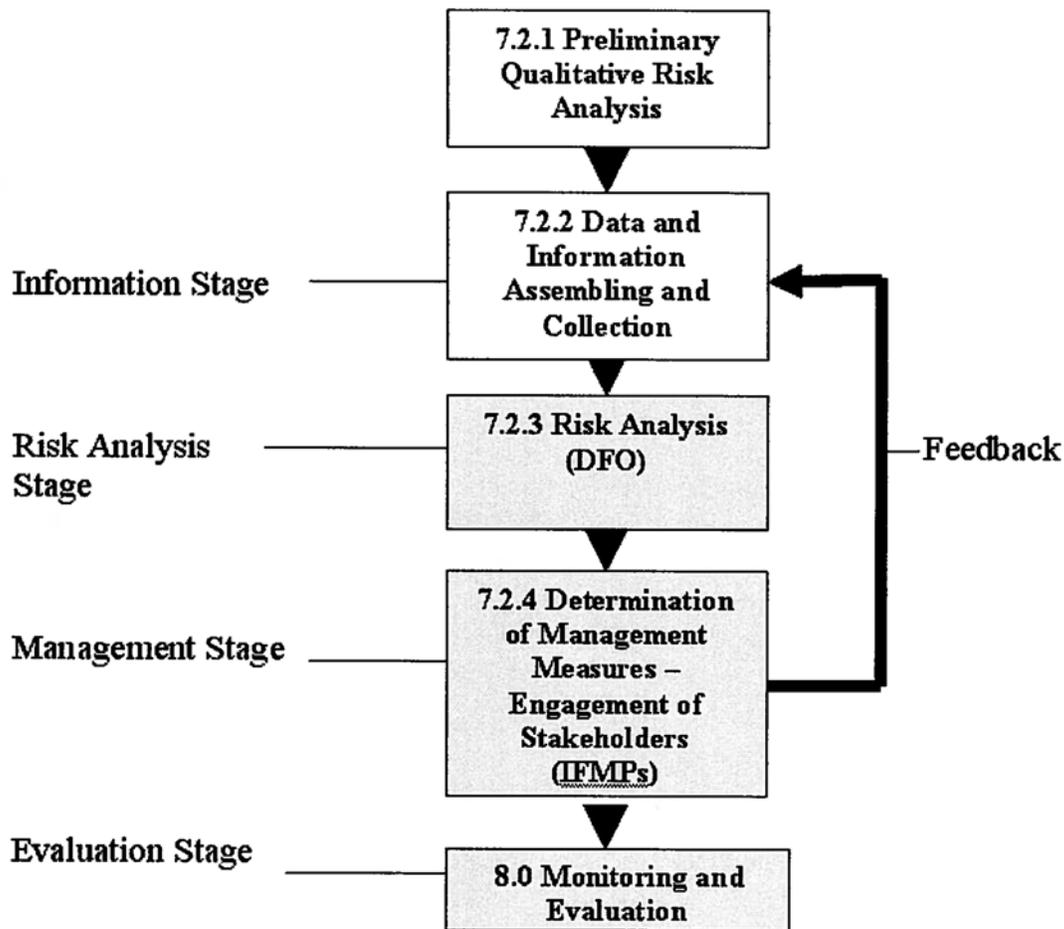
A **historically fished Area** is an area where there is a history of fishing by any gear type whose ecosystem impacts are considered similar to the potential impacts of the gear being proposed for fishing. This includes current ongoing fishing activity.

The following section lays out the different stages to be followed for the collection of data, analysis of data to determine the ecological and biological significance of benthic features found in the area where fishing is historically or currently being conducted, assessing the likelihood of risk of serious or irreversible harm the fishing activity may have on the benthic features, and determination of management measures where needed. The processes outlined in this section are consistent with the existing processes for data collection, assessment and management measures applicable in most fisheries, including those managed in advisory processes for Canadian fisheries and under management plans such as Integrated Fisheries Management Plans (IFMPs) or Conservation Harvest Plans (CHPs).

DFO Regional offices will provide for adequate stakeholders advisory processes to engage interested stakeholders, including the fishing industry, provinces and territories, First Nations and other Aboriginal groups and non-governmental organizations. These will include the IFMPs, CHPs and other fishery advisory processes, where such exist, and may include processes associated with LOMAs.

Risk analyses of fishing activities in historically fished areas will be conducted by DFO to identify their potential interactions with any likely sensitive benthic areas that requires further consideration. DFO will establish a work plan for collection and analysis of existing data and the collection of new data to identify benthic features that are sensitive to fishing and to conduct risk analysis of fisheries in historically fished areas.

The content of this Policy, including the elements of the procedures will be reflected in the management plans for the fisheries, including the IFMPS and the CHPs for Canadian fisheries. The elements of the procedures are as follows:



7.2.1 Preliminary Qualitative Risk Analysis

Regional fisheries management offices will conduct a preliminary evaluation of historically fished areas that have not been fished by bottom contact gear to identify and map general areas of high, medium or low risk based on availability of data, information and knowledge of the benthic features and characteristics of that area. Using the results of the qualitative risk analysis, regions will inform stakeholders of the level of risk assigned to different areas and determine appropriate provisional measures until complete risk analyses are conducted. Preliminary measures may include the application of an encounter protocol or restrictions on fishing activity, particularly in areas of low data and information availability and areas where sensitive ecosystem features are known or likely to exist.

Areas that have not been exposed to bottom contacting fishing that are immediately adjacent or interconnected to areas that have been or are currently fished by bottom contact gear that the department has identified as likely having similar benthic or features will be considered lower risk areas. Departmental decisions on the similarity of benthic types or features in adjacent areas will be based in part on the spatial scale and dynamics of the benthic features.

7.2.2 Data Assembling and Collection (Information Stage)

DFO will assemble and map all existing information and data on the existence of benthic habitat, communities and species in historically fished areas, as per section 6.0. of this Policy. Participants

in advisory processes may contribute information and data for this purpose. Additional data collection mechanisms and requirements may be identified for all fisheries in respect of benthic habitat, benthic communities and species and data necessary to assess the impacts of fishing on these benthic features. DFO will assemble and map all existing information and data on existing fishing activity, including information and data with respect to areas that have not been fished in a number of years and where partial or whole recovery of damaged benthic habitat may have occurred.

A review of currently available data will be conducted within the advisory process with a view to determine what additional data collection may be required, how the data should be collected and who should collect it (license holders, science surveys, etc.).

Where necessary, additional data collection requirements will be outlined in the conditions of the licence. Data requirements may differ from fishery to fishery. Consideration will be given to specific data collection methods necessary to collect information and data on the benthos.

DFO will establish clear guidelines for the collection of ecological and biological data for fisheries.

7.2.3 Risk Analysis Stage

1. Data collected from fishing activity in historically fished areas and all other relevant data and information from other available sources, such as information identified under LOMA processes, will be assessed by DFO, to determine the ecological or biological significance of the benthic features. Other available sources could include research by other government departments, provincial governments, non-governmental organizations, academics, and, as may be available, Aboriginal traditional knowledge and other local and traditional knowledge;
1. DFO will conduct a risk analysis using the Ecological Risk Analysis Framework (Risk Analysis Framework currently under development) to determine the likelihood (low, medium or high probability) of the proposed fishing activity causing serious or irreversible harm to any sensitive benthic ecosystem components and the likely extent and severity of the harm of the fishing activity on the benthic ecosystem components, if any. It will present and consider the implications of uncertainties that remain. Impact mitigation or avoidance options will be assessed, including gear modifications and substitutions;
1. Risk analysis will be provided in a timely manner to the advisory process for determination of appropriate management measures, in time for the following fishing season.

7.2.4 Determination of Management Measures – Engagement of Stakeholders (Management Stage Using Advisory Processes)

In general, decisions on whether mitigation or avoidance measures are needed and the nature of such measures in historically fished areas or parts thereof identified as sensitive will be derived from the following process:

1. **Submission of ecological risk analysis to the Advisory process**
2. **Review of ecological risk analysis by the Stakeholder Advisory process**
3. **Development of options for management measures**
4. **Submission of options for DFO decision**
5. **Implementation of management measures**

In determining whether mitigating measures are needed and the nature of such measures, DFO will consider advice provided by the Science Advisory Process and information provided by interested stakeholders.

Management measures to monitor such impacts may include:

- Gear restrictions or modifications or substitutions to reduce contact with the benthos and seafloor
- Effort reduction
- Spatial management of effort (taking into account the spatial distribution of benthic habitat and communities)
- Partial or total time and area closures to all or specific fishing gear
- Higher levels of monitoring, control and surveillance, including enhanced data collection and reporting, vessel monitoring and at sea observer requirements

All decisions will recognize the importance of balancing the need to conserve the affected fisheries resources and protect the identified sensitive benthic areas with the socio-economic importance of the fishery.

7.2.4.1 Expansion of Existing Bottom Contact Fisheries and Proposals for New Bottom Contact Fisheries

Proponents interested in expanding an existing bottom contact fishery with an established integrated fisheries management planning processes into an historically fished area that has not been exposed to bottom contact fishing in the past and that has been identified by DFO as a medium or high risk area are required to notify the existing management regime prior to expanding the fishery. DFO will conduct a risk analysis and appropriate management measures will be adopted for that fishery to avoid serious or irreversible harm to any identified sensitive benthic ecosystem components.

When a proponent is interested in exploring a new bottom contact fishery in a historically fished area that has not been exposed to any bottom contact fishing activity and has been identified by DFO as a medium or high risk area, a proposal should be developed and submitted to the appropriate regional office. Proponents should refer to the proposal process outlined in the Frontier Areas section of this Policy for guidance.

7.2.5 Implementation of Management Measures – DFO (Implementation Stage Using Management Tools)

Once a decision has been taken on appropriate management measures, the measures will be clearly identified in the management plan for the affected fishery (e.g. CHP, IFMP) and/or the fishing licence.

Management plans will include a section on ecosystem considerations for the fishery. Where sensitive benthic areas have been identified, the management plan will detail the relevance of the sensitive benthic areas and the management measures taken by the fishing activity.

Management plans will clearly identify implementation processes and timelines for the adoption of mitigation measures.

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8.0 Monitoring and Evaluation

The monitoring and evaluation of the processes identified in this policy will be part of a broader monitoring and evaluation framework for fisheries that are managed by the department. This includes:

- Management Plans, including Conservation Harvesting Plans and IFMPs

- Fishery Assessment Reports

Management plans will be used as a vehicle for implementing the processes and procedures outlined in this policy and as a means of identifying benthic ecosystem management considerations for fisheries.

DFO Assessment Reports will be used to determine gaps in the delivery of process, procedures and policies established by DFO for the management of Canada's fisheries.

In the context of renewing the management plans for all fisheries upon their term, DFO will, together with stakeholders in the advisory process, consider the effectiveness of management measures put in place, in light of results achieved in the relevant DFO Assessment Reports. Where necessary and appropriate, changes to the management measures will be considered.

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9.0 Glossary

Benthic Ecosystem

An ecosystem found on the seafloor, including on the slope of the Continental Shelf.

Benthic Areas

Benthic areas are areas of the seafloor (including the slope of the Continental Shelf) where benthic habitat communities and species are found.

Biological Diversity

Biological diversity means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. (Convention on Biological Diversity)

Benthic Features

Benthic features are living aquatic organisms of the seafloor and substrate, including benthic habitat, communities and species.

Ecologically or Biologically Significant Areas (EBSA)

An area which provides a biological or ecological function which is considered relatively more important than the surrounding areas. The identification of EBSAs is guided by Canadian Science Advisory Secretariat Ecosystem Status Report 2004/006, which advises the use of three primary criteria (uniqueness, aggregation and fitness consequences) and two secondary ones (resilience and naturalness).

Ecosystem Approach

An approach to the management of human activity that considers all of the components of an ecosystem, that may be affected by the activity including populations, communities and habitat, and their linkages, as well as the impacts of the ecosystem on the state of the living resource.

Frontier Area

A frontier area is an ecosystem area in deep water (deeper than 2000m) areas or areas in the arctic where there is no history of fishing and little if any information is available concerning the benthic habitat features and the impacts of fishing on these features.

Historically Fished Area

A historically fished area is an ecosystem area where there is a history of fishing. This includes current ongoing fishing activity.

Large Ocean Management Area (LOMA)

A Large Ocean Management Area is an area within one of Canada's three oceans. There are five LOMAs in total, including the Beaufort Sea, the Pacific North Coast, the Eastern Scotian Shelf, Placentia Bay/Grand Banks and the Gulf of St. Lawrence. Within each LOMA, Canada has begun scientific overviews and assessments that will serve as the basis for objective setting exercises with affected and interested stakeholders within the planning areas. As part of the scientific review, Canada has begun to identify EBSAs within each of the planning areas.

New Fishery

Fisheries involving new species and/or stocks that are not utilized or not fully utilized, and not currently covered by a management plan.

Precautionary Approach

If there is both high scientific uncertainty and a risk of serious or irreversible harm, a lack of adequate scientific information will not be used as a reason for failing to take, or for postponing, cost effective measures for the conservation or protection of fish or fish habitat that are considered proportional to the severity of the risk.

DFO has elaborated a Risk-based Decision-Making Framework (ref) based on the Precautionary Approach which should be used in conjunction with this Policy when making decisions relating to matters under this Policy.

Sensitive Benthic Area

Sensitive benthic areas are areas that are vulnerable to a proposed or ongoing fishing activity. Vulnerability will be determined based on the level of harm that the fishing activity may have on the benthic area by degrading ecosystem functions or impairing productivity.

Shared Stewardship

Shared stewardship means those involved in fisheries management work cooperatively – in inclusive, transparent and stable processes – to achieve conservation and management goals. As per the AFPR, participants will be effectively involved in fisheries management decision-making processes at appropriate levels; they will contribute specialized knowledge and experience, and share in accountability for outcomes.

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