APPLICATION GUIDELINES FOR

CAGE AQUACULTURE FACILITIES

Ontario

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GLOSSARY OF TERMS

APPLICATION: A written submission to engage in aquaculture made under the FWCA.

APPLICANT: A person who seeks an aquaculture licence and submits an application for such a licence.

ASSESSMENT AREA: The area of Crown lake bed applied for occupational authority (e.g. Land Use Permit or other form of occupational authority) plus the lakebed area extending 200m in all directions from the boundary of the proposed Crown land occupation.

AQUACULTURE: The breeding or husbandry of fish, and the verb "culture" has, with respect to fish, a corresponding meaning (see below). Note: this is the definition provided in the FWCA.

AQUACULTURE OPERATION: All infrastructure (e.g. cages, anchors) and activities (e.g. feeding, fish health management) required for the culturing of fish.

CAGE CULTURE (CAGE AQUACULTURE): A cage culture facility consists of floating or submersible enclosures that maintain an open exchange of water for rearing fish at higher densities, usually in large bodies of water such as lakes, offering an alternative production system where open water conditions are suited to aquaculture development.

CLASS ENVIRONMENTAL ASSESSMENT (CLASS EA): An environmental assessment for a class of undertakings that is approved under Part II.1 of the *Environmental Assessment Act, 1990*.

CLOSED APPLICATION: An application that the MRNF has determined no longer warrants review.

CROWN LAND: For the purposes of aquaculture licences, this only includes lands administered under the *Public Lands Act* by the Ministry of Natural Resources and Forestry, and does not include any area regulated under the *Provincial Parks and Conservation Reserves Act, 2006*.

CULTURE: Defined in the definition of "aquaculture" and when used as a verb with respect to fish has a corresponding meaning with aquaculture.

ENVIRONMENT: As defined in s.1. of the *Environmental Assessment Act, 1990* means:

a) air, land or water,
b) plant and animal life, including human life,
c) the social, economic and cultural conditions that influence the life of humans or a community,
d) any building, structure, machine or other device or thing made by humans,
e) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or
f) any part or combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario.

ENVIRONMENTAL REGISTRY: An internet site established pursuant to the *Environmental Bill of Rights, 1993* (EBR) that provides the public with electronic access to information about the environment, including information about certain ministry proposals, decisions and events that could affect the environment.

FACILITY: Generally, includes equipment, infrastructure, buildings or improvements that are built, installed, or established to provide the physical means or assistance in relation to an action, operation, or course of conduct related to aquaculture.

FWCA: *The Fish and Wildlife Conservation Act, 1997*

G1 – SPECIAL NATIVE STOCKS: Native species or sub-species that have been reduced to a few local stocks and are **threatened** by extinction or extirpation (e.g. spotted gar); *and* native stocks within species that are **"glacial relics"**, i.e. stocks differentiated prior to the last ice age (e.g. Haliburton Highlands Lake Trout); *and* **remnant** native stocks in large lakes for

which most similar stocks with overlapping distribution have been lost, i.e. stocks differentiated since the last ice age (e.g. Lakes Huron and Superior Lake Trout stocks); *and* **remnant** native stocks which are genetically distinct and do not occur together, and other identified sensitive native stocks, i.e. stocks that have been physically isolated from other stocks since the last ice age (e.g. Lake Simcoe Lake Trout, Aurora Trout, Kawartha Lakes Muskellunge).

G2 – NATIVE STOCKS: This is basically all native stocks (i.e. those within their native range) that do not meet the criteria for G1 classification. However they can be more specifically described as native stocks that do not occur together and have been physically and genetically **isolated** from each other since the last ice age (e.g. most native Lake Trout and Brook Trout stocks); *and* native stocks with overlapping distribution that are **isolated** by behaviour from each other and are locally adapted to their habitats, but some gene flow between stocks may still occur; *and* a lost stock that may be rehabilitated from a neighbouring stock (e.g. Lake Nipissing Walleye, Brook Trout in headwater streams).

G3 – INTRODUCED STOCKS: These are stocks relocated to an area where they do not occur naturally. Introductions can be deliberate or accidental and can include exotics, naturalized species (e.g. Great Lakes Rainbow Trout), and stocks native to Ontario which are stocked beyond their native range (e.g. some bass waters).

HYPOLIMNION: The bottom layer of water in thermally-stratified waterbodies.

INACTIVE APPLICATION: An application MNRF has determined will not be reviewed further pending the applicant's satisfaction of conditions specified by the MNRF.

INELIGIBILITY CRITERIA: Conditions that may result in the cage aquaculture licence application being refused.

MINISTER: The Minister of the Ministry.

MITIGATION: Elimination, reduction and/or control of adverse environmental effects of a project.

MNRF OR MINISTRY: The Ministry of Natural Resources and Forestry.

OPERATIONAL BOUNDARY: A geographic area defined in the aquaculture licence representing the perimeter of the cage aquaculture operation site within which the environmental effects of the operation on sediment quality are expected to be contained.

PRIMARY SITE: The geographic location where the majority of aquaculture operations occurs (e.g. spatial, temporal).

SECONDARY SITE: A geographically discrete site from the primary site where fish from the primary site may be moved to on an annual or seasonal basis.

SPECIES REVIEW LIST: The list of species which will be considered throughout the review of an aquaculture licence application for impacts of the proposed aquaculture facility or operations on the species or its habitat.

TYPE 1 SITE: Enclosed (lake like) basins/embayments with limited flushing.

TYPE 2 SITE: Partially exposed sites having good epilimnion/metalimnion flushing but limited or no hypolimnion exchange.

TYPE 3 SITE: Exposed locations where the hypolimnion is well flushed.

WASTE ASSIMILATION: Consumption of aquaculture waste materials by benthic invertebrates and their conversion into invertebrate tissue indicated by benthic invertebrate densities.

1

INTRODUCTION

The Ministry of Natural Resources and Forestry (MNRF) has the lead legislative mandate for the management of Ontario's natural resources and has the authority to issue approvals for cage aquaculture. MNRF's successful management of cage aquaculture requires collaboration with other responsible regulatory or government agencies, First Nation and Métis communities, and others who have a shared interest in the stewardship of natural resources.

The objectives of the *Application Guidelines for Cage Aquaculture Facilities* (*Application Guidelines*) are to:

- Support an open, transparent, efficient and timely approach for the review of an application;
- Provide the applicant with guidance and information on preparing and submitting an application for cage aquaculture approvals; and
- Provide the applicant with information on the review process including consultation and engagement with First Nation and Metis communities and stakeholders.

The establishment and operation of a cage aquaculture facility in Ontario may also trigger obligations under a number of other provincial and federal statutes. Therefore, MNRF will act as the 'One Window' for applicants to facilitate, to the extent possible, the coordinated review of the application by provincial and/or federal agencies that are responsible for regulating and issuing of approvals, permits and authorizations or have policies that will be considered by the MNRF in the review of applications for licencing of aquaculture operations (see Section 4).

In addition, MNRF's application review and approval process will give consideration to the results of monitoring programs, new scientific research, experience, policy direction, and provincial and/or federal regulatory changes and update these *Application Guidelines* as appropriate.

Note: Applications for land based facilities are considered through a separate process as outlined in the Issuance of Aquaculture Licences, Renewals, Transfers, Amendments, Refusals and Cancellations Policy (FisPp. 9.2.1). Community hatcheries are required to use the Application for Aquaculture-Related Licences for Community Hatcheries.

2

PREPARING AND SUBMITTING AN APPLICATION

2.1 Application Types

MNRF approvals typically required for cage aquaculture include (but are not limited to):

- A cage aquaculture licence under the *Fish and Wildlife Conservation Act, 1997 (FWCA)* and *Ontario Regulation 664/98* (Fish Licensing); and
- Crown land occupational authority issued under the *Public Lands Act, 1990 (PLA)* for the use of Crown land associated with the cage aquaculture licence.

Application types are as follows:

- **TYPE A**
  - Application for MNRF **approvals for a new cage aquaculture operation that includes:**
    - A cage aquaculture licence under the *FWCA* and *Ontario Regulation 664/98* (Fish Licensing); and
    - Crown land occupational authority issued under the *PLA* for the use of Crown land associated with the cage aquaculture licence.
- **TYPE B**
  - Application for **modifications to a current MNRF approval** for an existing aquaculture operation including:
    - Changes in production (e.g. species cultured, annual production, feed quota, number of cages) associated with the aquaculture licence;
    - Changes to Crown land occupational authority (e.g. increase, decrease or relocation of boundaries); and/or
    - Addition of a secondary site.
- **TYPE C**
  - Applications for purposes of:
    - **Standard renewals** for existing facilities where approvals issued for the operations approach expiry; or
    - **Administrative amendments** of current aquaculture approvals (e.g. change of ownership or address).
    - Note: Type C applications reflect the same production, facility and Crown land occupational authority as that in the current approvals.

An application package consists of a completed application form **and** any additional information required as outlined on the form based on the type of application being submitted. The application form is available through the Ontario Central Forms Repository (www.forms.ssb.gov.on.ca) by searching "Application Form for Cage Aquaculture Facilities in Ontario". The applicant should use these *Application Guidelines* as a reference with respect to the initial application preparation and submission, and throughout the review.

MNRF's successful management of cage aquaculture requires collaboration with other responsible regulatory or government agencies, First Nation and Metis communities, and others who have a shared interest in the stewardship of natural resources.

NOTE: In the case that the applicant's request is solely for a change to an existing non-MNRF approval, the applicant should submit their request directly to the appropriate agency.

2.2 MNRF Contact and Submission Offices

For applications in the Great Lakes, the appropriate contact and submission office is the Lake Unit responsible for the area in which the site is being proposed or currently located. For inland lake applications, the appropriate contact and submission office is the local MNRF District Office. Refer to the application form for up-to-date contact information. Regular communication between the applicant and MNRF throughout the application and review process is strongly encouraged.

2.3 Before Submitting an Application

The applicant should arrange a pre-submission meeting with MNRF for Type A and B Applications. In advance of the pre-submission meeting, the applicant should provide general information to the MNRF including:

- The species proposed for culture (See Section 4.1.1);
- Proposed production levels;
- General facility information; and
- A map of the proposed location.

This will allow MNRF to be prepared to:

- Discuss application eligibility;
- Identify any initial concerns; and
- Identify any potentially impacted First Nation and Métis communities and inform them of the applicant's proposal early in the process.

In order to gather the necessary background information and assess the feasibility of the proposal, it is recommended the applicant undertake the following prior to submitting an application:

- Conduct a preliminary assessment to determine if there are any interests or potential impacts to stakeholders within or in the vicinity of the proposed operation;
- Share information with applicable adjacent land users and owners and the local municipality;
- Determine whether the area is zoned for the proposed use by contacting local government;
- Determine whether the species being proposed to be cultured is on the list of species eligible for culture (Schedule B of *Fish Licensing Regulation, O. Reg. 664/98*) and present in the receiving waterbody; and
- Contact First Nation and Métis communities identified by MNRF to share information and engage in a dialogue regarding the proposed operation (e.g. species to be cultured, potential size and location of the facility, communities' interest and/or concerns and other considerations). Any relevant documentation or correspondence with First Nation and Métis communities should be included in the application package.

3

CONSULTATION AND NOTIFICATION REQUIREMENTS OF MNRF

3.1 Aboriginal Consultation

The Crown has a legal duty to consult, and where appropriate accommodate, Aboriginal communities when it has knowledge of an existing or asserted Aboriginal or treaty right and contemplates conduct or actions that might adversely impact that right. For example, the Crown's duty to consult is triggered when it considers issuing a permit, authorization or approval for aquaculture activities or facilities, which have the potential to adversely impact an Aboriginal or treaty right such as the right to hunt, fish, or trap in a particular area.

The scope of consultation required in particular circumstances ranges across a spectrum depending on both the nature of the asserted or established Aboriginal or treaty rights and the seriousness of the potential adverse impacts on those rights.

The Crown has the responsibility to ensure that the duty to consult, and where appropriate accommodate, is met. However, the Crown may delegate the procedural aspects of consultation to an applicant. Where this occurs, the Crown will clearly communicate to the applicant what its roles and responsibilities are on a case-by-case basis. This may include notification, disclosing information, discussing issues, providing opportunities to make submissions, providing written responses to comments and/or modifying proposals to address comments and timelines.

3.2 Public Consultation and Notification

The overall purpose of public consultation is to provide opportunities for the public to contribute feedback and inform decisions relating to the project. Public consultation offers a mechanism for sharing information on the applicant's proposal and identifying and resolving potential issues related to a project. *The Class Environmental Assessment for MNRF Resource Stewardship and Facility Development Projects* (Section 4.1.7) and the *Environment Bill of Rights* (Section 4.1.8) outline minimum consultation requirements for MNRF. Additional opportunities for public consultation may be necessary if MNRF considers it appropriate relative to the scale, level of complexity, and potential environmental effects of a given project. MNRF will be responsible for posting any required notices on the Environmental Registry and will include information relevant to the proposal. Where possible, opportunities to coordinate the timing of provincial and federal public notices and consultation will be considered.

4

RELEVANT LEGISLATION, REGULATIONS, POLICIES, AND AGREEMENTS

The establishment and operation of an aquaculture facility may trigger obligations under a number of provincial and federal statutes. There may be permits and approvals required under additional legislation and regulations (e.g. *Ontario Oil, Gas and Salt Resources Act*, *Ontario Heritage Act*, etc.) depending on the unique features of each application.

4.1 Provincial

The key provincial legislation, regulations, and policies (as amended and/or updated) for cage aquaculture are identified below. Please refer to the statutes and regulations for the full legal requirements (www.ontario.ca/laws).

4.1.1 Fish and Wildlife Conservation Act, 1997 and Ontario Regulation 664/98

An aquaculture licence is required to culture fish in Ontario under the FWCA and is subject to any conditions set out in the licence or in Ontario Regulation 664/98 (the "*Fish Licensing Regulation*"). The fish species that may be approved for culture are limited to those prescribed in Schedule B of the *Fish Licensing Regulation*. Applications requesting to culture species currently not listed on Schedule B, cannot be processed until such time that the Introductions and Transfers Committee (ITC) has been engaged. Contact Fisheries Section for further information on the ITC process.

Licence conditions may include requirements to mitigate potential environmental impacts, such as impacts that could result from operations or that relate to escapement of fish (Appendix D). Such conditions may also specify the strain of species or source of stock approved for culture. Fish culture may only occur in the location described and listed on a licence.

An aquaculture licence application is reviewed to assess the potential impacts of the proposed aquaculture operation on the receiving ecosystem (e.g. water and sediment) and existing fish populations (Appendix A and Appendix B). Type B and Type C Applications will also be reviewed with respect to compliance and objective achievement (e.g. water and sediment quality objectives) of current aquaculture approvals.

4.1.2 Public Lands Act, 1990

Provincial Crown (public) lands, including shore-lands and the beds of most lakes and

rivers in Ontario, are managed by the MNRF under the *PLA*. For the purposes of aquaculture licences, Crown land excludes provincial parks and conservation reserves, which are managed by the MNRF under the *Provincial Parks and Conservation Reserves Act, 2006 (PPCRA)*. Cage aquaculture facilities on Crown land require occupational authority under the *PLA*. Approvals for Crown land occupational authority must adhere to land use planning, strategic policy direction, and environmental assessment requirements (Section 4.1.7). Furthermore a Crown land occupational authority will only be issued if the Crown's duty to consult with Aboriginal peoples has been met, if applicable (Section 3.1).

A work permit may be required for activities on Crown land and/or shore lands that are not expressly stated in the occupational authority document (e.g., aquatic vegetation removal).

Where it is determined that a lease is the most appropriate form of occupational authority, the applicant will be required to have a Crown Lands Plan of Survey completed by an Ontario Land Surveyor.

Review of an application for Crown land occupational authority is required to determine whether the proposed use of public lands contributes to the environmental, social and economic well-being of the province by providing for orderly use and sustainable development of Ontario's public land. The approved occupational authority, if granted (i.e. land use permit, licence of occupation, lease), will be issued simultaneously with an approved aquaculture licence. Occupational authority is typically granted when all other provincial approvals are in place and the first year of rent has been paid. Crown land rental rates are based on market value. Type B and Type C Applications will also be reviewed to confirm compliance with existing occupational authority approvals.

Note: For applications to establish an aquaculture facility on First Nation Reserves, occupational authority is pursuant to the *Indian Act, 1985.*

4.1.3 Provincial Parks and Conservation Reserves Act, 2006

The PPCRA provides direction for the planning and management of provincial parks and conservation reserves in Ontario. Provincial parks and conservation reserves protect representative ecosystems, natural and cultural heritage, maintain biodiversity and provide opportunities for compatible, ecologically sustainable recreation. Protected areas are planned and managed to maintain their ecological integrity. Aquaculture is not consistent with the legislative and policy framework for provincial parks and conservation reserves. Cage aquaculture facilities would not be granted occupational authority under the PPCRA and therefore, MNRF will not issue licences to conduct aquaculture in a provincial park or conservation reserve.

4.1.4 Ontario Water Resources Act, 1990 and the Environmental Protection Act, 1990

The purpose of the *Ontario Water Resources Act, 1990* (OWRA) is to provide for the conservation, protection and management of Ontario's waters and for their efficient and sustainable use, in order to promote Ontario's long-term environmental, social and economic well-being. The purpose of the *Environmental Protection Act, 1990* (EPA) provides for the protection and conservation of the natural environment. Collectively they prohibit impairment of Ontario's waters and the discharge of contaminants to the natural environment if it may cause an adverse effect. Both of these Acts are administered provincially by the Ministry of Environment and Climate Change (MOECC), including the enforcement of the provisions of these Acts.

The MOECC's Provincial Water Quality Objectives (PWQO), more commonly known as the "Blue Book", provides Provincial guidance on safeguarding Ontario's public waters and fulfill Provincial obligations under the two Acts.

The MOECC's Provincial Policy Objectives for Managing Effects of Cage Aquaculture Operations on the Quality of Water and Sediment in Ontario's Waters (2017) (MOECC Policy Paper) sets out cage aquaculture specific water and sediment quality objectives, which are consistent with the Blue Book, to ensure long-term environmental sustainability of commercial scale aquaculture in Ontario. Applications will be reviewed to determine whether the proposed aquaculture operation will be able to meet the objectives set in the MOECC Policy Paper (Appendix A).

4.1.5 Endangered Species Act, 2007

The purposes of the *Endangered Species Act, 2007* (ESA) are:

- To identify species at risk based on the best available scientific information;
- To protect species that are at risk and their habitats;
- To promote the recovery of species that are at risk; and
- To promote stewardship activities to assist in the protection and recovery of species that are at risk.

If at any point throughout the application review period it is determined that there are any species at risk or its habitat that may be impacted by the proposed aquaculture facility and/or operations, additional information and approvals may be required.

For an up to date list of species at risk listed provincially and protected under the ESA, please see Ontario Regulation 230/08.

Note: The list of species at risk and their classifications may be different under the federal *Species at Risk Act, 2002* (SARA) (refer to Section 4.2.2). It is the applicant's responsibility to comply with both the Provincial and Federal species at risk legislation.

4.1.6 Invasive Species Act, 2015

The *Invasive Species Act, 2015* sets out a legislative framework that provides for the identification of invasive species that threaten Ontario's natural environment. In addition to listing invasive species in regulation, the Act enables the detection, control, and management of invasive species by MNRF, partners and the public. Aquaculture applications will not be approved for any regulated invasive species in Ontario and will be reviewed to ensure consistency and compliance with invasive species legislation, regulations and policies. Licence conditions may be applied to ensure that operations do not contribute to the establishment and/or spread of invasive species.

4.1.7 Class Environmental Assessment for MNRF Resource Stewardship and Facility Development Projects (Class EA-RSFD)

The MNRF is subject to the requirements of the *Environmental Assessment Act*, 1990 (EAA). The MNRF's Class EA-RSFD provides EAA coverage for resource stewardship and facility development projects, including their planning, design, construction, operation, maintenance, rehabilitation, and retirement or decommissioning. The disposition of certain or all rights to Crown resources (e.g., Crown land administered under the *Public Lands Act*) is one of the MNRF projects to which the Class EA-RSFD applies.

The Class EA-RSFD has requirements that MNRF must follow before proceeding with a proposed project. The Class EA-RSFD screening process enables a proposed project to be assigned to one of four categories (Category A, B, C or D) based on the potential net environmental effects, Aboriginal considerations and level of public concern.

A few examples of projects that could fall under various Class EA-RSFD categories include:

CATEGORY A:

- A transfer of Crown land occupational authority documents (e.g. Type C applications).

CATEGORY B:

- Type A applications proposing a new facility and Crown land occupational authority; or
- Type B applications requesting an expansion of Crown land occupational authority to allow for infrastructure upgrades or improvements, or production increase.

The Application Guidelines aim to support an open, transparent, efficient and timely approach for the review of an application, with MNRF acting as the 'One Window' for applicants to facilitate and coordinate applications.

CATEGORY C:

- Applications requesting occupational authority to allow for production that would require a feed allocation greater than 2500 tonnes (metric) per year.

Each Class EA-RSFD category has specific requirements for project evaluation (e.g. project plans, environmental studies) and consultation (e.g. public notice inviting the public for comment on the proposed project, Notice of Completion), tailored to the potential risk associated with that category of project. For example, Category B projects include one notice at the beginning of the process and a second notice to parties who expressed their interest. Whereas the Category C process includes two mandatory points of notification and the preparation of an Environmental Study Report. In addition, evaluation of the environmental effects and/or issues raised throughout this process may identify the need for additional information and/or mitigation measures. Where significant concerns remain, the project may be elevated to a higher Class EA-RSFD category.

MNRF may delegate certain procedural aspects of the applicable Class EA-RSFD requirements to the applicant. This may include notifying, disclosing information, discussing issues, providing opportunities to make submissions, providing written responses to comments and modifying proposals to address comments and timelines.

4.1.8 Environmental Bill of Rights, 1993

The EBR sets out minimum levels of public notice that must be met before the Government of Ontario makes decisions on certain kinds of environmentally significant proposals. A proposal to issue a licence that authorizes a person to engage in cage aquaculture is prescribed as a Class I proposal under the EBR and requires giving notice on the Environmental Registry, except where the proposal relates to the issuance of a licence for a cage aquaculture facility that requires a decision under the MNRF Class EA-RSFD (e.g. where the facility would require occupational authority under the PLA). In cases when the exception applies, MNRF will post Information Notices on the Environmental Registry at the onset of the preliminary review (step 5a) to allow for public comment to be provided and considered by the MNRF.

4.2 Federal

Approvals, authorizations and/or permits may be required and obtained from federal agencies that have a regulatory responsibility for aquaculture operations. The federal legislation, regulations, and policies (as amended and updated) most relevant for cage aquaculture are identified below. Please refer to the statutes and regulations for full legal requirements (http://laws-lois.justice.gc.ca/eng).

Where federal approvals, authorizations and/or permits are required, the appropriate federal agency(ies) will assess the proposal for any duty to consult Aboriginal communities.

4.2.1 Fisheries Act, and Aquaculture Activities Regulations

For aquaculture operations, the deposit of prescribed deleterious substances (e.g. drugs, pesticides and biochemical oxygen demanding matter) and serious harm are authorized through the *Aquaculture Activities Regulations* (AAR), subject to conditions specified within (including but not limited to annual reporting requirements). Best efforts to avoid serious harm during aquaculture facility siting by re-locating or modifying a planned operation is a responsibility of aquaculture operators; otherwise, if serious harm cannot be avoided, compliance with Section 15 of the AAR authorizes the operation subject to conditions which include taking reasonable measures to mitigate the risk of serious harm.

The AAR was developed to clarify conditions under which aquaculture operators may install, operate, maintain or remove an aquaculture facility, or undertake measures to treat their fish for disease and parasites, as well as deposit organic matter, under Sections 35 and 36 of the *Fisheries Act*. The AAR allows aquaculture operators to do so within specific restrictions to avoid, minimize and mitigate any potential detriments to fish and fish habitat. Operators are responsible for meeting the requirements of all applicable legislation and regulations and are advised to refer to the most current version of the regulations directly.

4.2.2 Species at Risk Act, 2002

The purposes of the federal *Species at Risk Act, 2002* (SARA) is to prevent species from becoming extirpated or extinct, provide for the recovery of species that are extirpated endangered or threatened as a result of human activity, and to manage species of special concern to prevent them from becoming endangered or threatened. If at any point throughout the application review period it is determined that any species at risk or its critical habitat are in the area, further information and approvals may be required.

For an up to date list of species at risk that are federally listed and protected under SARA, please see Schedule 1 of that Act.

Note: the list of species at risk and their classifications may be different under the provincial *Endangered Species Act, 2007* (refer to Section 6.1.3). It is the applicant's responsibility to comply with both the provincial and federal species at risk legislation.

4.2.3 Navigation Protection Act, 1985

A primary purpose of the *Navigation Protection Act, 1985* (NPA) is to regulate works and obstructions that risk interfering with navigation in navigable waters listed in the schedule of the Act. Any construction, placement, alteration, repair, rebuilding, removal or decommissioning and/or related activities undertaken on works located in these waters will require review by Transport Canada (TC). The applicant is advised that proposals for aquaculture operations in any of the following are not likely to receive approval under the NPA:

- Published anchorages with defined limits (anchor berths)
- Marked navigation channels
- Ferry routes
- Federal harbours
- Harbour approaches
- Marinas or mooring areas
- Military activity areas
- Fish sanctuaries / Marine Protected Areas (MPA)
- Cables / pipelines / drilling platforms
- Published safe havens
- Water aerodromes
- Federal parks and heritage wreck sites
- Pilot boarding stations
- Known ice-breaking routes.

4.3 Agreements and Commissions

Ontario is a signatory to agreements and commissions with respect to both water quality and fisheries including the *Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health* (COA) and *The Great Lakes Fishery Commission* (GLFC). Ontario is also a leader in the development of strategic initiatives with respect to both water quality and fisheries including *domestic action plans* and the *Great Lakes Strategy*. Although these initiatives do not specifically provide criteria with respect to the review of an aquaculture application, strategic and/or operational policy may be developed in response to such initiatives. The *Application Guidelines* will be updated in the event that a future policy response outlines additional factors and/or criteria that are required to be taken into consideration when reviewing an application.

5

APPLICATION REVIEW PROCESS

5.1 Review Process

MNRF will act as the 'One Window' for the applicant to facilitate a coordinated review of the application by provincial and federal agencies that are responsible for regulating and issuing approvals, permits and authorizations required for cage aquaculture activities in Ontario.

MNRF decisions with respect to the review of an application are informed by:

- Information provided by the applicant;
- Consultation with First Nation and Métis communities;
- Information received from other government agencies, and the public;
- Legislation, regulations, and strategic and operational policies; and
- Expertise of government staff involved in the review of the application.

MNRF will coordinate, to the extent possible, the information exchange between the applicant and responsible agencies (e.g. timing and communication of decisions). Each agency will make its independent decision regarding approvals, permits and authorizations under the applicable legislation within their agency mandate.

Figure 1 outlines a typical application review process for all application types. It has been noted throughout these *Application Guidelines* when an aspect of the review process does not typically apply to an Application Type.

The application review process is intended to be iterative and phased, whereby the findings of each phase, along with ongoing Aboriginal consultation and public engagement, will inform government decisions. Effective and meaningful Aboriginal consultation and engagement is especially important throughout the entire review process including the possible need to mitigate the proposal to accommodate the concerns and interests of First Nation and Métis communities that relate to any demonstrable impacts of the proposed project. As such, it is important to emphasize that Figure 1 is an overview of the main steps and should not be interpreted as depicting a definitive sequence of events. Additional details are provided for key steps of the review process in Section 5.3.

5.2 Application Review Timelines

The timelines required to process an application will vary depending on the scope and nature of the application, the need for data collection and analysis, and the level of Aboriginal consultation and public engagement that is required. General application review timelines are anticipated as follows:

- Type A or Type B applications that require more comprehensive data collection, consultation and notification could take up to two years;
- Type C applications may be processed within 6 to 9 months.

Throughout the review process changes to the original application may be required. The applicant must submit all changes in writing to MNRF. Depending on the nature and/or significance of any changes to the application (e.g. location, scale) or the application status (see Section 5.2.1), the applicant may be required to revisit aspects of the review, application, Aboriginal consultation, and/or public engagement process.

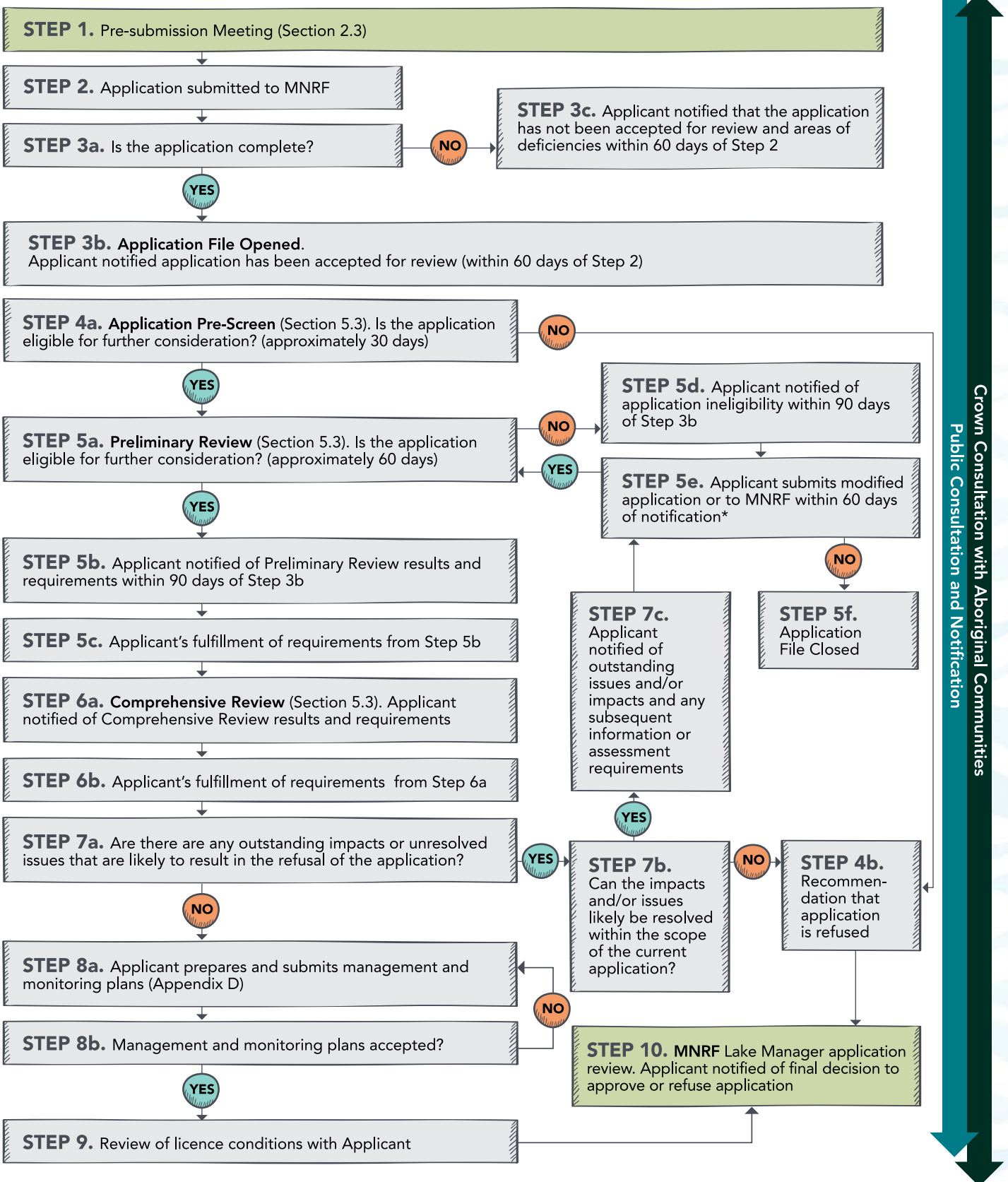
5.2.1 Application Status

MNRF may determine that an application is "closed" if the applicant has been denied or unable to obtain an authorization, permit or approval under the authority of a government ministry, regulator, or agency other than the Ministry, that is required for the proposed aquaculture operation or facility to proceed; or the applicant fails to fulfill the requirements identified by the MNRF throughout the review process.

MNRF may determine that an application is "inactive" if the applicant has indicated that it is not proceeding with the proposal.

MNRF will notify the applicant of any change of application status with supporting rationale 30 days prior to a change of status.

MNRF will inform the appropriate First Nation and Métis communities of any changes to the status of an application and any potential effect on the consultation process.



* In cases where the Applicant is unable to modify their application within 60 days, the Applicant may alternatively submit a letter outlining their intent to submit a modified application, the anticipated nature of the modification(s), and date of submission. If a modified application is not received by the specified date the MRNF may choose to close the application review file.

Note: All times are expressed as the number of business days.

Figure 1 **Typical application review process for all application types.**

5.3 Key Review Steps

The following section provides additional details on key stages in the review process outlined in Figure 1.

During these stages MNRF will:

- Liaise with federal agencies regarding the status of the application's review with respect to federal permits, authorizations and/or approvals;
- Continue consultation as appropriate with Aboriginal communities to whom the Crown's duty to consult is owed;
- Continue to work towards the fulfillment of public notification requirements; and
- Update appropriate First Nation and Métis communities regarding the outcome of key steps.

STEP 3A: REVIEW FOR COMPLETENESS

To ensure a timely review of applications, incomplete applications will not be accepted. Upon submission of a completed application, MNRF will review the application package to confirm that the application form is complete and all required supporting documentation has been submitted. Detailed analysis of the application package will occur in later stages of the review process. It is the applicant's responsibility to address any inaccuracies or deficiencies that are identified in the application, which may impact the application review timeline.

STEP 4A: PRE-SCREEN AGAINST INELIGIBILITY CRITERIA

The intent of the Pre-Screen stage is to identify any components of the application that make it ineligible for further consideration. Type A and Type B applications will be refused if any of the following criteria are identified at any stage of the application process:

- Application is inconsistent with area-specific land use policy found in the Crown Land Use Policy Atlas (CLUPA), and for areas south of CLUPA coverage, within District Land Use Guidelines or other land use plans;

- Application is inconsistent with Crown land management policies (e.g. *Public Lands Act* policy PL 4.02.01 *Application Review and Land Disposition Process*);
- Species proposed to be cultured is not included on the list of species eligible for culture (Schedule B of *Fish Licensing Regulation*, O. Reg. 664/98)[1] or is not a native or naturalized species within the receiving waterbody; or
- The proposed location is within an area regulated under the *PPCRA*.

A Type A or Type B Application may also be refused if the application proposes operations in Type 1 or Type 2 Sites and presents a high risk of negative impacts on local water quality.

STEP 5A: PRELIMINARY REVIEW

The intent of the Preliminary Review is to examine in more detail all relevant components of the application including, but not limited to, the following:

- Considerations and requirements relevant to Aboriginal consultation;
- Considerations and requirements with respect to key provincial and federal legislation, regulations, polices and guidelines (see Section 4);
- Assessments (Type A and Type B Applications)
  - Preliminary Water Quality Assessment (Appendix A);
  - Preliminary Fisheries Assessment (Appendix C);
  - Containment Assessment (Appendix C);
- Class EA-RSFD screening; and
- Review of compliance history and objective achievement with previous or current approvals (e.g. water and sediment quality);

The applicant will be notified of results from the Preliminary Review, including, but not limited to, the following:

- Results of the Assessments;
- Additional information, reports or assessments required to support the application review as a result of the assessments or under the Class EA-RSFD;
- Delegation of the procedural aspects of the Crown's duty to consult Aboriginal communities, if not already communicated to the applicant earlier in the process (e.g. during the Pre-Submission Meeting);
- Identification of any Aboriginal land claims that indicate that the proposal should not go ahead;

1 Applicants requesting to culture species currently not listed on Schedule B, be advised that the application cannot be further processed until such time that the Introduction and Transfers Committee has been engaged. Contact the Species Conservation Policy Section, MNRF for further information.

- Public engagement and notification requirements;
- Identified Aboriginal, social or environmental concerns or impacts requiring mitigation;
- Outstanding non-compliance or objective achievement (e.g. water and sediment quality) issues with current approvals requiring action (if applicable); and/or
- Provincial and federal permit, approval or authorization requirements.

STEP 6A: COMPREHENSIVE REVIEW

Once the applicant has fulfilled the requirements identified in the Preliminary Review, a Comprehensive Review of the application will commence including, but not limited to, the following:

- Continued considerations and requirements with respect to key provincial and federal legislation, regulations, polices and guidelines (see Section 4); and
- Continued review of considerations and requirements relevant to Aboriginal consultation;
- Assessments (Type A and Type B Applications):
  - Fish and Fish Habitat Assessment (Appendix B)
  - Supplemental Water and Sediment Quality Assessment (Appendix A)
- Review of compliance history and objective achievement (e.g. water and sediment quality) with previous or current approvals; and
- Additional requirements under the Class EA-RSFD.

The applicant will be notified of results from the Comprehensive Review, including, but not limited to, the following:

- Results of the Assessments (see Appendix A and Appendix B);
- Additional information, reports or assessments required to support the application review;
- Crown Lands Plan of Survey requirements;
- Continued and/or additional requirements related to the Crown's duty to consult with Aboriginal communities, including the possible need to mitigate a project proposal;
- Public engagement and notification requirements;
- Identified social or environmental concerns or impacts requiring mitigation;
- Outstanding non-compliance issues with current approvals requiring action (if applicable); and/or
- Provincial and/or federal permit, approval or authorization requirements.

Once the applicant has fulfilled the requirements identified by the Comprehensive Review **and** there are no outstanding issues or impacts that require mitigation, the applicant will be notified to commence Step 8a (i.e. preparation of monitoring and management plans) (Appendix D). As with other information relevant to the proposed project, the draft monitoring and management plans will be shared through the Aboriginal consultation process. Once approved, these plans will become part of the approval or licence conditions.

Where there are outstanding issues or impacts requiring mitigation that are not likely to be addressed within the scope of the current application, a recommendation may be made to refuse the application.

STEP 10: FINAL DECISION

The MNRF Lake Manager will review the final application package, including management and monitoring plans, proposed licence conditions and make a decision with respect to the approval or refusal of the application. MNRF will notify the applicant of the MNRF's decision and a rationale for the decision.

Additionally, MNRF will communicate its decision and the rationale to appropriate First Nation and Métis communities, as per the consultation process. Where an approval is granted, this communication will include any additional information that is of interest to the First Nation or Métis community (e.g. conditions, timing, etc.).

MNRF's ongoing Aboriginal consultation process can help inform MNRF of potential impacts on Aboriginal rights and treaties with respect to the renewal of a licence and/or permit (i.e. Type C Applications). For example, in cases where there have been unintended or unexpected actions or consequences, MNRF can adjust mitigation and accommodation efforts as needed at the time of renewal.

APPENDIX A:

ENVIRONMENTAL ASSESSMENTS: WATER AND SEDIMENT QUALITY ASSESSMENTS

Introduction

This Appendix provides a summary of the key assessments and criteria to determine whether the proposed aquaculture facilities are sized, situated, and managed to minimize the potential impacts to water and sediment quality that may result from dissolved oxygen depletion, phosphorus enrichment or sediment toxicity (Figure 1).

The review process applies to:

- All Type A applications; and
- Type B applications that are proposing changes to existing approvals that have the potential to impact water and sediment quality (e.g. increased production).

The assessments are based on reports submitted by the applicant as part the initial application submission and throughout the review process. Details on specific assessment requirements can be found in Appendix C.

Cage aquaculture operations with a proposed annual feed allocation of more than 2,500 metric tonnes of low phosphorus feed (i.e. not more than 1.3% phosphorus content) will require information in addition to what is outlined below. Also, as a precautionary measure, proposed new large operations will initially be licensed for annual feed allocation of up to 2,500 metric tonnes only, and future decisions respecting approval of any proposed expansions beyond 2,500 metric tonnes annually would be based on evidence of consistent regulatory compliance and good environmental performance of the operation.

If at any stage of the review, the proposed aquaculture operation is deemed "ineligible" (e.g. site, scale, configuration), the applicant will be provided with an opportunity to undertake additional sampling and/or modify the application to mitigate potential impacts (e.g. site relocation, cage configuration). However, if the applicant chooses not to modify the application, the proposed facility will be deemed 'ineligible' and the application will be recommended for refusal.

1. Preliminary Water Quality Assessment

The Preliminary Water Quality Assessment is based on the review of the following:

- Preliminary Water Quality Assessment Report (Appendix C) for Type A applications; or
- Existing annual water quality reports for Type B applications.

If it is determined that the receiving waterbody would be designated as a "Policy 2" receiver as per the *Water Management: Policies, Guidelines, Provincial Water Quality Objectives* (1993), (PWQO) then the proposed site, scale and/or configuration of the proposed aquaculture operation would be considered ineligible (i.e. not meeting PWQO). A Policy 2 receiver is a situation where the receiver's water quality for a relevant parameter exceeds the PWQO. For cage aquaculture, relevant characteristics of a "Policy 2" receiver include:

- Average total phosphorus (TP) concentrations for the ice-free period that exceed 10 µg/litre; or
- Dissolved oxygen (DO) concentrations that are below 47% saturation for warm water biota (i.e. centrarchid fish communities) or 54% saturation for cold water biota (i.e. salmonid fish communities).

If is it determined that the PWQOs are likely to be met, then the application is eligible for further consideration.

2. Supplemental Water Quality Assessment

A Supplemental Water Quality Assessment (Appendix C) is completed to determine whether the proposed operations will be able to meet the PWQOs. If review of the Supplemental Water Quality Assessment indicates that the receiving waterbody will not likely meet the PWQOs, then the proposed site, scale and/or configuration of the of the proposed aquaculture operation would be considered ineligible. Characteristics of an ineligible aquaculture operation include:

- Predicted seasonal (i.e. spring, summer, fall) TP median concentrations exceed 10 µg/litre at a distance of 30 m from the cages; or
- Predicted late season DO profiles indicate less than 47% saturation for warm water biota (i.e. centrarchid fish communities) or 54% saturation for cold water biota (i.e. salmonid fish communities).

If the review indicates that the water quality objectives are likely to be met, then the application is eligible for further consideration.

3. Sediment Quality Assessment

The sediment quality objective is to maintain non-toxic sediment through ongoing waste assimilation such that a site can return to a natural state over some reasonable period of time, without human intervention, upon cessation of farming.

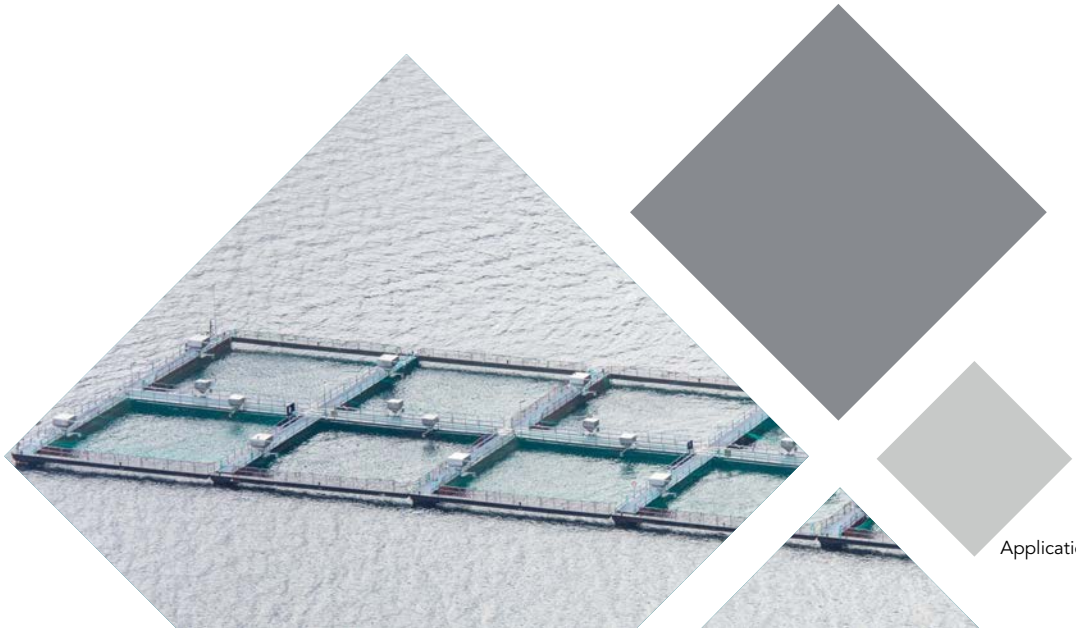
TYPE A APPLICATIONS

A Sediment Quality Assessment is completed to determine whether the proposed aquaculture operation will be able to meet the sediment quality objective given the proposed production scale and/or cage configuration. If the review indicates that sediment quality objective is not likely to be met, then the proposed aquaculture operation will be considered ineligible.

If despite subsequent modifications to the application, there are indications that the release of waste materials associated with the operation will not likely meet the sediment quality objectives, then MNRF may apply a precautionary and adaptive management approach to any approvals to ensure that the sediment quality objective is met (e.g. phased production levels or operations, increased or enhanced monitoring and reporting).

TYPE B APPLICATIONS

Sediment Quality Reports that have been submitted to the MNRF as required by current approvals applicable to the site and/or operations will be reviewed to determine whether the proposed operation is likely to meet the sediment quality objective. Additional data and information may be required to support the sediment quality assessment. If the review indicates that the sediment quality objectives are not currently being met as outlined in the current aquaculture licence the proposed operation will be considered ineligible. If the review indicates that the sediment quality objectives are likely to be met, then the proposed aquaculture operation will be eligible for further consideration.



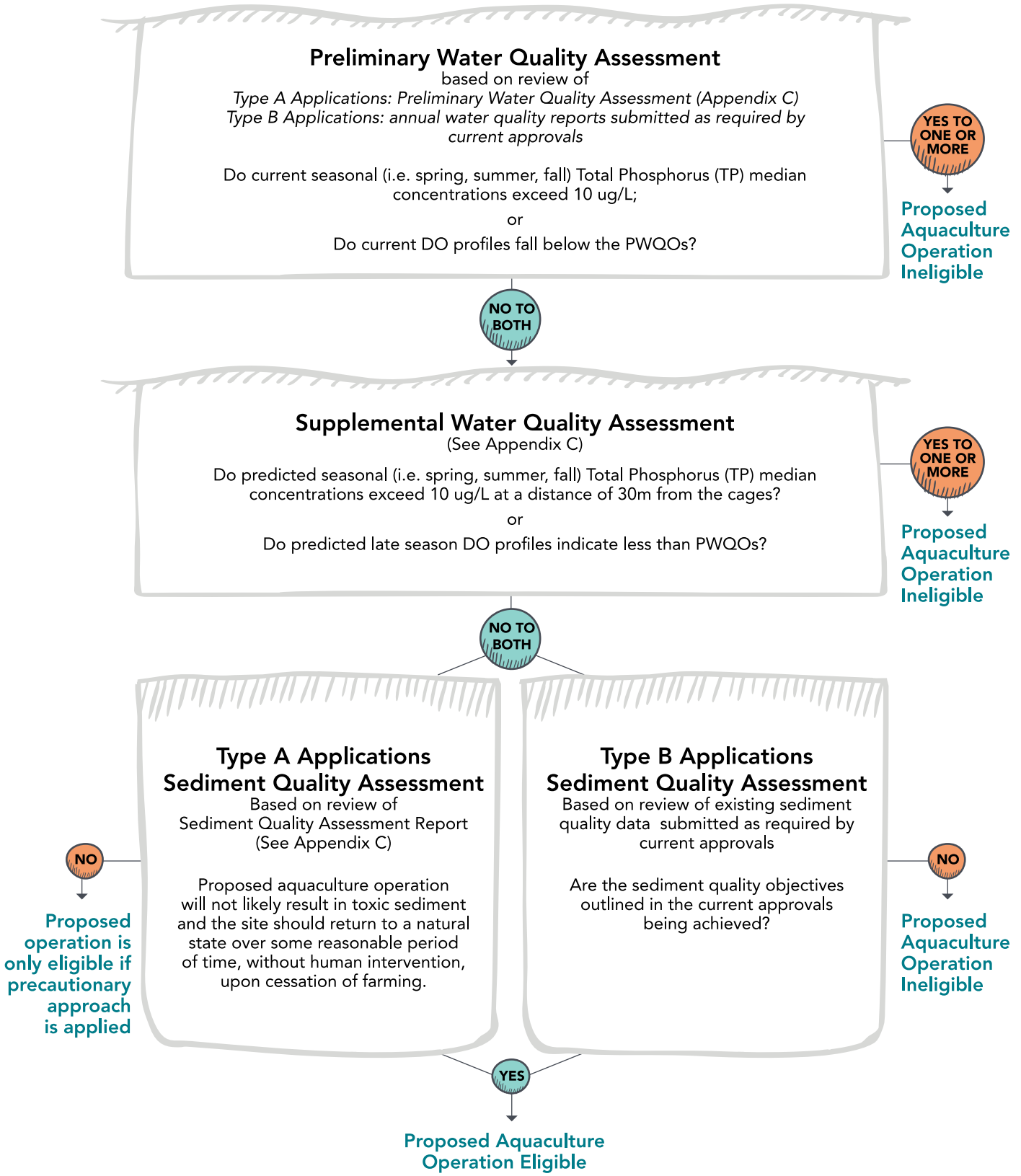


Figure 2 **Summary of the review process to determine the potential impacts of Type A and Type B applications on water and sediment quality.**

APPENDIX B:

ENVIRONMENTAL REVIEW: FISH AND FISH HABITAT ASSESSMENT

Introduction

This Appendix provides a summary of the review process that is used to determine the potential impacts of Type A and Type B Applications that are requesting an expansion of the Crown land occupational authority boundaries. Figure 1 outlines the overall assessment and review process. These applications require a Fisheries Background Report to be submitted with the initial application. Upon review of this report, a Spawning Habitat Assessment and/or Fish Spawning Assessment may be required. Details on these assessments can be found in Appendix C. The applicant may request that the timing of these assessments be modified to accommodate the coordination of field work. Applications on inland lakes may also require additional fish and fish habitat assessments to ensure that the proposed operations do not impact fish or fish habitat.

1. Preliminary Fisheries Assessment

REVIEW OF SPECIES PROPOSED FOR CULTURE:

The fish species that may be approved for culture are limited to those that are:

- Prescribed in *Schedule B* of the *Ontario Fish Licensing Regulation 664/98*; and
- Already present in the receiving waterbody (i.e. genetics protection).

An aquaculture licence application is reviewed to assess the potential impacts (e.g. genetic, ecological, etc.) of the proposed species on the receiving ecosystem and existing fish populations. In some cases the species, stock or strain proposed for culture may be deemed too high risk and the application will be recommended for refusal. In other cases, licence conditions may include requirements to mitigate potential environmental impacts that could result from the escapement of fish (e.g. restrictions on the strain or stock of species, restrictions to use sterile fish, fish health monitoring).

FISHERIES BACKGROUND REPORT:

MNRF will review the Fisheries Background Report (Appendix C) to support the preliminary review of the application. Specifically, the report will be used to gain a better understanding of the broader aquatic ecosystem surrounding the proposed site, as well as to develop a Species Review List specific for each application. The Species Review List will generally include important game and commercial fish, species of importance to First Nation and Métis communities, prominent species or species assemblages featured in Fish Community Objectives and Fisheries Management Plans, and Species at Risk (identified under SARA and/or the ESA). In cases where there are species at risk on the Species Review List, additional assessments may be required to assess the potential impacts of the proposed operations.

The Fisheries Background Report will also be reviewed to determine whether there are known fish habitat values (i.e. spawning habitat) for any species on the Species Review List in the Assessment Area. If it is determined that there is known spawning habitat(s) for species on the Species Review List in the Assessment Area, the proposed site will be ineligible for further consideration due to the high potential of the proposed operations having a negative impact on the identified spawning habitat. The applicant will be provided an opportunity to modify their application and move their proposed location to an area with no known spawning habitat. If the applicant chooses not to modify their application, the application will be recommended for refusal. If there is uncertainty regarding the presence of spawning habitat, the

applicant will be required to confirm the absence of suitable spawning habitat by completing a Spawning Habitat Assessment.

2. Spawning Habitat Assessment

If the Spawning Habitat Assessment (Appendix C) does not indicate the presence of suitable spawning habitat for species on the Species Review List, the site will be deemed eligible for further consideration and the applicant will have fulfilled the Fish Habitat Assessment requirements for the application.

If there is suitable spawning habitat(s) for species on the Species Review List in the Assessment Area, the proposed site will be deemed ineligible due to the high likelihood of the proposed aquaculture operation having a negative impact on spawning habitat. The applicant will be provided with an opportunity to modify the application, which may involve moving the operation to an area with no spawning habitat. If the applicant chooses not to modify the application, the proposed site will be determined to be 'ineligible' and the application will be recommended for refusal. Alternatively, the Applicant may choose to proceed with a Fish Spawning Assessment.

3. Fish Spawning Assessment

A Fish Spawning Survey is an assessment program specifically designed to determine the potential use of suitable spawning habitat for the species on the Species Review List. The detection of one or more species on the Species Review List in a reproductive condition will result in deeming the habitat to have a high likelihood to support spawning fish and the proposed site location will be deemed ineligible. The applicant will be provided an opportunity to modify their application by proposing a new location to mitigate any potential impacts to spawning habitat. If the applicant chooses not to modify their application, the proposed site of the operation will be deemed 'ineligible' and the application will be recommended for refusal.

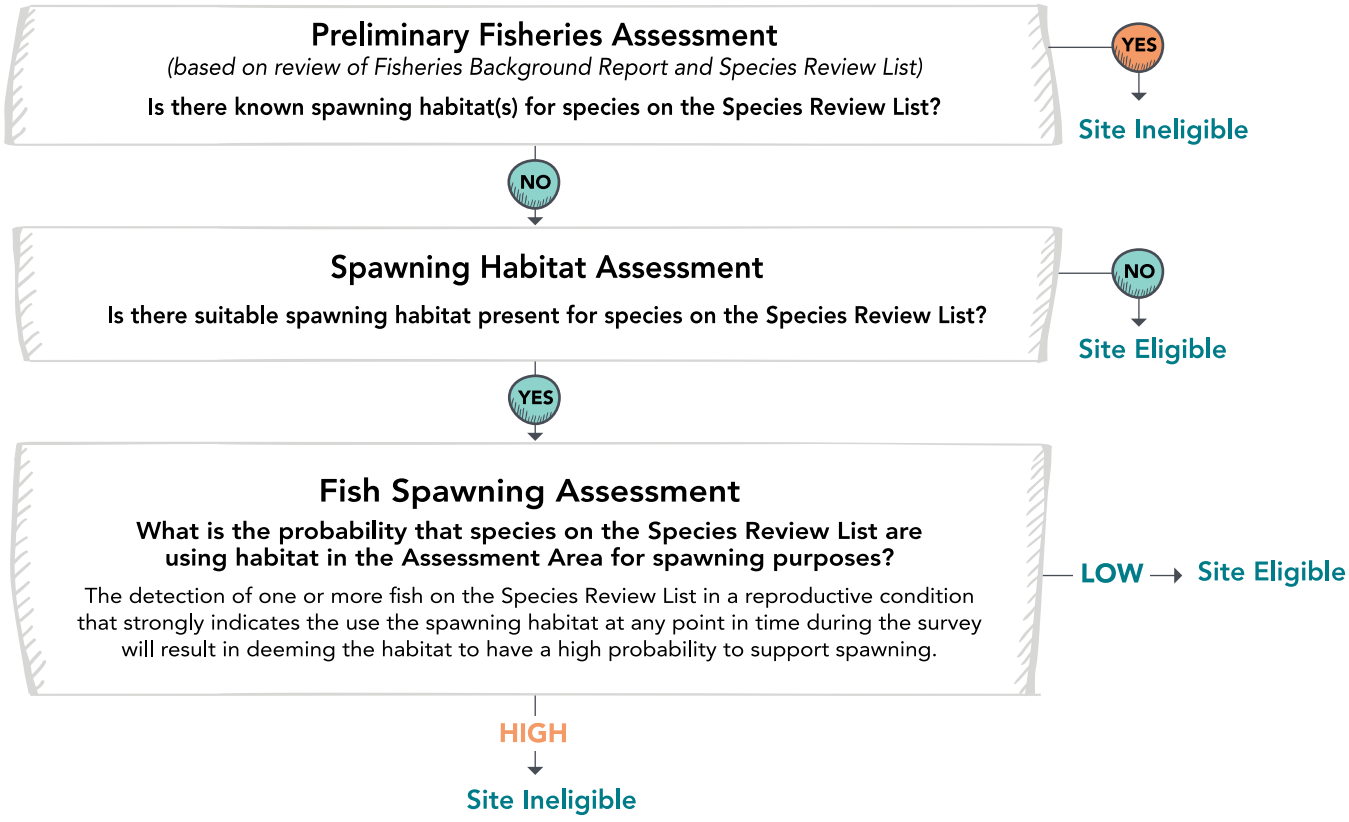


Figure 3 **Summary of the review process to determine the potential impacts of Type A and Type B applications on fish and fish habitat.**

APPENDIX C:

INSTRUCTIONS FOR COMPLETING ASSESSMENTS

This Appendix provides the applicant with information on how to fulfill assessment requirements as part the initial application submission and throughout the review. MNRF will provide additional guidance regarding the design, methodologies and reporting requirements as required throughout the review process. Please contact the MNRF with any outstanding questions regarding reporting requirements.

All monitoring, reporting and assessment must be conducted by a qualified consultant or competent person with the applicable expertise and experience. A statement of qualifications, training and experience for personnel participating in sample collection, data analysis and reporting will be required for all reports. In most cases, such persons will have an applicable degree in science or environmental science and/or a professional engineer designation with specialization in hydrology, aquatic ecology, limnology, biology, physical geography and/or water resource management. In some cases MNRF may require that reports, assessments and/or surveys be carried out by an independent third party (i.e. someone other than the applicant).

Site considerations and operational monitoring requirements will be tailored according to the type of site. As the risk of local water quality impacts is higher in more sensitive Type 1 and 2 sites, it was further recommended that cage aquaculture operations be sited in exposed and well-flushed environments, such as Type 3 sites, to minimize potential for eutrophication.

1. Preliminary Water Quality Assessment

TYPE A APPLICATIONS

A Preliminary Water Quality Assessment is required for both primary and secondary sites to characterize the water quality of the area in the immediate vicinity and surrounding area of the proposed aquaculture site. The applicant is required to carry out water quality sampling as per the following.

- **Number of sampling stations**
  - **Offshore configurations:** sampling must occur at four sample stations
  - **Attached-to-shore configurations:** sampling must occur at three sample stations
- **Location of sample stations:** must be located 30m from the proposed cage array.
- **Multiple cage arrays (fallowing):** If the applicant is proposing multiple cage arrays at a site (i.e. fallowing) it is recommended that the applicant contact the MNRF to confirm the sampling design.
- **Reference sampling stations:** Two stations representing background conditions relative to the proposed site are to be established and sampled at a depth, exposure, orientation and circulation similar to the proposed cage site location. If the proposed cage location is situated where water depth is <20m, an additional station within 1km from the cages is to be established where water depth represents the most deep proximal station for temperature and dissolved oxygen monitoring. In cases where there may not be such a suitable site within 1km, the applicant should contact MNRF regarding an alternative sampling site location.

- **Frequency of Sampling (all configurations):** At each sampling station, within the same year, water sampling is to be conducted as per the following:
  - Three (3) times prior to thermal stratification (spring) obtained at five-day to seven-day intervals following ice-out;
  - Five (5) times during the thermally stratified period (obtained at approximately monthly intervals during the period from late-May through to mid-October); and
  - Three (3) times following fall turnover obtained at five-day to seven-day intervals.

Temperature and dissolved oxygen (DO) profiles are to be collected at each site and all samples are to be analyzed for total phosphorus (TP). The Preliminary Water Quality Assessment Report will include a summary of available water quality information, including results of water quality sampling data, a geo-referenced map indicating the sampling station locations, copies of the analytical reports and a summary of the sampling methodology.

2. Supplemental Water Quality Assessment

A Supplemental Water Quality Assessment will be carried out to determine whether the proposed operations, for both baseline and long-term production levels, would meet the water quality objectives outlined in Appendix A.

Typically this will require water quality monitoring and the documentation of water quality simulations (i.e. modelling), which cover a range of receiving water current velocity conditions with a particular emphasis on periods of peak feeding. This will require the application of a suitable water quality model and, depending on the availability of existing data, may require the collection of current velocity and thermal profile data.

The Supplemental Water Quality Assessment Report will include:

- A description of the selected modelling approach and the rationale for its selection;
- Current velocity monitoring data;
- A rationale for the range of modelled periods and assumptions related to nutrient and waste inputs associated with peak feeding periods;
- The range of predicted TP concentrations 30m from the cages and at the operational boundary; and
- DO modelling predictions for late season (i.e. pre-turnover) DO profiles.

3. Sediment Quality Assessment

A Sediment Quality Assessment will be required to determine whether the proposed operations for Type A Applications, at all proposed production levels, will meet the sediment quality objectives outlined in Appendix C.

Typically this will require the applicant to complete sediment monitoring and deposition modelling to estimate the pattern of solid waste dispersion and deposition. A range of receiving water current velocity conditions, with a particular emphasis on periods of peak feeding, will be required. The Sediment Quality Assessment will typically include:

- A description of the modelling approach selected and the rationale for its selection;
- Current velocity monitoring data;
- A rationale for the range of modelled periods and assumptions related to nutrient and waste inputs associated with peak feeding periods; and
- Predicted annual solid waste deposition rates ($gC\ m^{-2}d^{-1}$) from the vicinity of the cages to the outer edge of the waste depositional footprint. Note: the waste depositional footprint is defined as the area where 1.0 $gC\ m^{-2}d^{-1}$ is accumulated

The applicant will be required to confirm the design, methodologies and reporting requirements of the assessment prior to implementation.

4. Fisheries Background Report

A Fisheries Background Report is a comprehensive collection of existing fish and fish habitat background information for the area within 5km of the cage aquaculture site and is required for Type A and certain Type B Applications. The report will include a summary of fish and fish habitat information (e.g. maps, inventory reports). This report will be used to provide a general understanding of the broader aquatic system, as well as specific information on any fisheries or fish habitat that may be impacted. Sources and examples of information that may be available are listed in Table 1 of this Appendix.

Note: The list provided in Table 1 is not exhaustive and the level of data available will vary across the province.

Table 1 **Fisheries Background Information Sources and Types**

FISHERIES AND OCEANS CANADA (DFO)

Source of information

- Aquatic SAR mapping, reports, recovery strategies, management plans, etc.; and/or
- DFO SAR and freshwater fisheries databases

Type of information

- Fisheries and habitat information; and/or
- Species at Risk (SAR) information

MINISTRY OF NATURAL RESOURCES AND FORESTRY (MNRF)

Land Information Ontario

Source of information

- Mapping (e.g. topographic maps, base maps, soil conditions, quaternary geology, bedrock, physiography, groundwater, provincial parks, conservation reserves, digital terrain, elevation maps, etc.);
- Natural Resources and Values Information System (NRVIS); and/or
- Aerial photographs

Type of information

- Fish community, population information;
- Fish habitat and habitat use (e.g. spawning, rearing or nursery locations);
- Occurrence of SAR and related habitat data;
- Species distribution and migration information;
- Waterbody names (Note: Natural Resources Canada's Gazetteer is to be used for consistent naming of locations/waterbodies);
- General waterbody size;
- Bathymetry and lake/embayment reports;
- Potential barriers to fish movement;
- Groundwater;
- Coastal wetlands, provincially significant wetlands or other significant aquatic communities or ecosystems; and/or
- Location of provincial parks and conservation reserves

UPPER GREAT LAKES MANAGEMENT UNIT (UGLMU)

Type of information

- Databases that include, but not limited to, information collected during nearshore, offshore, smallfish, sturgeon, cormorant, fishway, plankton sampling, commercial fishing daily catch reports, benthic sampling, sportfish surveys and creel surveys.

INDIGENOUS AND MÉTIS COMMUNITIES OR ORGANIZATIONS

Source of information

- Organizations associated with Provincial Territorial Organizations (e.g. Anishinabek/Ontario Fisheries Resource Centre, Mushkegowuk Environmental Research Centre, etc.);
- Métis Nation of Ontario;
- Lands and resources departments within individual First Nations or Métis communities; and/or
- Publicly available consultant reports

Type of information

- Indigenous Traditional Ecological Knowledge (TEK) studies; additional TEK may be shared through the consultation process with First Nation and Métis communities
- Water quality observations (e.g. frequency of algae blooms)
- Fish health observations
- Fish community and population information;
- Fish habitat and habitat use (i.e. spawning, nursery or rearing locations);
- Occurrence of SAR and related habitat data;
- Species distribution and migration information;
- Fish stewardship and habitat enhancement and restoration initiatives/projects, including specifications;
- Navigation maps;
- Potential barriers to fish movement; and/or
- Benthos, plankton, water quality

OTHER GROUPS AND RESOURCE USERS

Source of information

- Anglers, angling groups and outfitters;
- Commercial bait harvesters and commercial fishermen;
- Stewardship groups such as Ontario Streams, Trout Unlimited, field naturalists;
- Universities and colleges;
- Hydro One and Ontario Power Generation;
- Knowledgeable local residents; and/or
- Conservation Authorities

Type of information

- Fish community and population information;
- Fish habitat and habitat use (i.e. spawning, nursery or rearing locations);
- Occurrence of SAR and related habitat data;
- Species distribution and migration information;
- Fish stewardship and habitat enhancement and restoration initiatives/projects, including specifications;
- Navigation maps;
- Potential barriers to fish movement; and/or
- Conservation Authority watershed information

5. Spawning Habitat Assessment

As outlined in Appendix B, an applicant may be required to complete a Spawning Habitat Assessment. The purpose of the Spawning Habitat Assessment is to collect bathymetry and substrate composition data in the Assessment Area to determine the potential for the presence of suitable spawning habitat. MNRF will provide additional guidance regarding the design, methodologies and reporting requirements of the Spawning Habitat Assessment.

6. Fish Spawning Assessment

As outlined in Appendix B, an applicant may be required to complete a Fish Spawning Assessment to determine the potential use of the suitable habitat identified by the spawning habitat assessment for each species on the Species Review List. The spatial scope of the Fish Spawning Assessment will be in the immediate vicinity of any potential spawning habitat in the Assessment Area. The Fish Spawning Assessment will be carried out to span the duration of all relevant spawning activity using appropriate methods (i.e. gear size) to assess the utilization of these sites by all species on the Species Review List. MNRF will provide additional guidance regarding the design, methodologies and reporting requirements of the assessment.

7. Fish Containment Assessment

A Fish Containment Assessment is a comprehensive assessment of the capacity of the aquaculture facility's infrastructure to minimize the potential ecological risk associated with fish escapement and must consider the following factors in the design of the facility:

- Manufacturer's design specifications for cages and other equipment;
- Layout and design of the mooring system (for risk minimization); and
- Experience of the mooring crew or mooring consultants in relation to:
  - Meteorological conditions and seasonal weather patterns;
  - Hydrologic conditions and currents; and
  - Upland topography, site bathymetry and substrate.

Unless otherwise approved, this assessment must be completed by a qualified professional engineer who has the appropriate designation and is licensed to practice in Ontario. The professional should have technical expertise to plan the design and/or installation of improvements and containment structures at an aquaculture facility.

8. Crown Lands Plan of Survey

Where it is determined that a lease is the appropriate form of occupational authority, the applicant will be required to have a Crown Lands Plan of Survey completed by an Ontario Land Surveyor (OLS). Survey instructions will be provided to the applicant by MNRF.

APPENDIX D:

CAGE AQUACULTURE MANAGEMENT AND MONITORING PLANS

Prior to the issuance of an aquaculture licence, the operator will be asked to submit a number of management and monitoring plans which, upon approval, will become conditions of the aquaculture licence.

1. Fish Health Management Plan

A Fish Health Management Plan is required with the objective of keeping fish healthy at the site by minimizing disease that may arise at the facility, transfer from the facility to the receiving waterbody and/or from spread within a facility.

Consistent with the *Ontario Regulation 664/98 (Fish Licensing Regulation)*:

- 22 (1) The holder of an aquaculture licence shall immediately report to the Minister the discovery in fish of any of the disease organisms listed in Schedule C or of any other disease organism of which the Minister has notified the holder.
- 22 (2) Unless the Minister directs otherwise, no holder of an aquaculture licence shall sell or otherwise dispose of fish taken from a location set out in the holder's licence if the fish are infected with a disease organism listed in Schedule C or any other disease organism of which the Minister has notified the holder of the licence.

In addition, to the requirements under the Fish Licensing Regulation (Section 3.1.1), the Fish Health Management Plan must include husbandry, monitoring and reporting requirements for:

- Maintenance of proper environmental conditions to ensure suitable rearing environment for fish;
- Routine monitoring of fish to observe behaviour and early indications of health problems and stress;
- Fish handling procedures to minimize stress, injury, escapement and predisposing fish to disease;
- Limits on fish densities to minimize stress and mortalities;
- Predator management methods to exclude predators from the facility and from interacting with the fish;
- Rapid diagnosis, isolation, and treatment of disease outbreaks;
- Implementation of appropriate biosecurity measures;
- Utilization of comprehensive production strategies to optimize feed efficiency and waste management; and
- Reporting on fish health/disease, drug/antibiotic/pesticide use and any mortalities as required by applicable federal legislation and/or regulations.

2. Fish Containment Plan

As per subsection 21(1) of the *Ontario Regulation 664/98 (Fish Licensing Regulation)*, it is a condition of an aquaculture licence that the aquaculture licence holder:

a) Adhere to the measures for preventing the escape of fish described in the application for the licence, if any;

b) Correct, as required by the Minister, any deficiencies in such measures that are identified by the Minister;

c) Report to the Minister the number of fish that escape in excess of the number permitted in the licence; and

d) Attempt to recapture escaped fish if the Minister has given approval in advance but otherwise obtain the direction of the Minister before attempting to recapture them.

A Fish Containment Plan is required and must outline the operational requirements to be implemented to minimize the potential ecological risks associated with escaped fish. Components of a Fish Containment Plan must include management, monitoring and reporting requirements including but not limited to:

- Any recommendations, advice or outcomes from the review of the Fish Containment Assessment Report;
- Equipment used at the aquaculture facility to be designed and constructed to meet generally accepted standards or best management practices of the aquaculture industry and compatible with conditions at the proposed location of the aquaculture facility and with containment requirements;
- All equipment, materials and structures employed are to be designed, constructed, installed, inspected and maintained in a manner that prevents escapes, including escapes caused by damage, holes or tears to net cages or containment structures;
- Monitoring, evaluation and maintenance of containment structures, including cage support systems and net cages, to prevent escapes and to detect and respond to any escapes once detected or suspected;
- Containment structures to be installed by a person who knows the risks of fish escapement from the containment structures and the measures needed to minimize these risks;
- Ensuring that all equipment coming into contact with the net be designed to prevent entanglement and chaffing of the net;
- Open-top nets to be extended to a height above the surface to prevent jumping fish from escaping;
- Net mesh sizes sufficient to contain the smallest fish in the cage;
- Additional mitigation measures to reduce potential genetic risk to native fish stocks (i.e. stock and/or strain selection, sterilization);
- Inspection of all nets for ice damage immediately following ice-in and ice-out and repairs are made as required;
- All nets to maintain more than 67% of their manufactured rating at all times;
- Logs to be maintained recording the use and maintenance of each net;
- Fish transfer techniques to prevent stray fish escapement during transfer;
- Contingency plans to address unplanned releases of farmed fish; and
- Reporting of fish escapes to MNRF in accordance with Ontario Regulation 664/98.

3. Sediment Quality Monitoring Plan

A Sediment Quality Monitoring Plan is required and must support the assessment of an aquaculture operations to determine if sediment quality objectives are being met (Appendix A).

The applicant will receive additional direction regarding the preparation of the Sediment Quality Monitoring Plan (i.e. sampling design, reporting requirements) during the review process.

4. Water Quality Monitoring Plan

A Water Quality Monitoring Plan is required to support the assessment as to whether an operation is meeting the water quality objectives. The applicant will receive additional direction regarding the preparation of the Water Quality Monitoring Plan (i.e. sampling design, reporting requirements) during the review process.

5. Decommissioning Plan

A Decommissioning Plan is required to ensure that, upon expiry, cancellation, termination or revocation of the Crown land occupational authority, the site is left in a clean and safe condition and returned, as much as possible, to its original state. A Decommissioning Plan is required to address changes to fish habitat structure and complexity or short-term increases in suspended sediment concentrations and deposition of suspended material on benthic habitat. The Decommissioning Plan should include the following:

- Schedule, methods, materials and equipment to be used to remove all structural and support features;
- Description of any improvements that will be done to restore natural conditions;
- Description of monitoring that will be carried out to ensure environmental impact issues are resolved, including but not limited to annual benthic invertebrate and sediment monitoring until benthic invertebrate communities and sediment chemistry meet reference conditions;
- Description of any other procedures that will occur if operations cease; and
- Description of the removal of equipment and site remediation activities, which may result in the removal or alteration of shoreline, bottom or water column structures and the suspension or release of silt, organisms and organic debris to the water column.

Note: Activities involved in the removal of structures and site remediation may also interfere with navigation. When planning the decommissioning of a site, Transport Canada should also be consulted.

6. Waste Disposal Plan

A Waste Disposal Plan is required to minimize the potential impact of the operations on the receiving waterbody and any upland areas associated with the facility. The Waste Disposal Plan will describe how waste will be managed including, but not limited to, the following:

- Mortality and offal collection and disposal;
- A contingency plan for the disposal of fish in the event of large scale mortality; and
- Disposal of chemicals (e.g. pesticides) and refuse.

7. Fish Containment Assessment

A Fish Containment Assessment is a comprehensive assessment of the capacity of the aquaculture facility's infrastructure to minimize the potential ecological risk associated with fish escapement and must consider the following factors in the design of the facility:

- Manufacturer's design specifications for cages and other equipment;
- Layout and design of the mooring system (for risk minimization); and
- Experience of the mooring crew or mooring consultants in relation to:
  - Meteorological conditions and seasonal weather patterns;
  - Hydrologic conditions and currents; and
  - Upland topography, site bathymetry and substrate.

Unless otherwise approved by MNRF, this assessment must be completed by a qualified professional engineer who has the appropriate designation and is licensed to practice in Ontario. The professional should have technical expertise to plan the design and/or installation of improvements and containment structures at an aquaculture facility.