

Guide for Land-based Aquaculture Institutional Development Plans

INTRODUCTION

Purpose of this guide

The Nova Scotia Department of Fisheries and Aquaculture (the Department) has prepared this guide as a reference for proponents preparing a Development Plan for an institutional licence application for land-based aquaculture for fish, shellfish, and/or plants.

The Development Plan fulfills part of the requirements for an application for a new institutional land-based aquaculture licence. A completed application must consist of a Development Plan and an Application Form. Guidance for all of these requirements is available at the Department's website: www.novascotia.ca/fish/aquaculture/.

Before preparing a Development Plan for an institutional licence, proponents should first complete a meeting with Department staff to discuss the intended institutional activities and to review Development Plan requirements.

This guide is not a substitute for the *Fisheries and Coastal Resources Act* or regulations. Proponents should obtain copies of the Act and regulations for their reference (Appendix A). Where the process and time frames given in this document differ from the regulations, the regulations shall prevail.

Updated versions of this guide will be available on the Aquaculture Division website www.novascotia.ca/fish/aquaculture/.

Background

An institutional licence is used to conduct aquaculture for the purpose of public fishery enhancement and research activities that are not for the purpose of commercial gain.

Where the site at which aquacultural activities are proposed to be carried on is on private land, an aquaculture licence may only be issued to the owner or lessee of the land.

An institutional licence cannot be reassigned. Applicants seeking a renewal, or amendment to an institutional licence should contact the Department to determine Development Plan requirements for their request.

The completed Development Plan submitted, as described in this document, must provide information that will address the factors to be considered in decisions related to land-based applications according to the licensing process of the Province of Nova Scotia. These include technical viability, financial viability, and demonstration of operating in accordance with the *Fisheries and Coastal Resources Act*, the relevant regulations made under the Act and any guidelines or policies established by the Minister.

The Development Plan may also provide information for government network partners in order for them to fulfill their jurisdictional duties in advising the Department on the application.

Information collection for the Development Plan

Information for completing the Development Plan should be acquired through whatever biological, ecological, and social data collection and analysis the applicant deems necessary to acquire the requested information.

Submission format

In order to facilitate government review of submitted applications and to establish a standardized format for all applications, applicants must follow the submission format guidelines, as follows:

- All requested information, the minimum of which is the information as required in this document, is to be submitted to the Department in an electronic format.
- Each section of the Report must start on a new page and be labelled matching the sequence established in this guide.
- Each section of the Report must contain all information required for that section (including supporting information such as maps, diagrams, etc.).

Public notice and disclosure

As part of the process for deciding on an aquaculture application, the Nova Scotia Department of Fisheries and Aquaculture (“Fisheries and Aquaculture”) may disclose application information to other government bodies.

In accordance with departmental policy, which seeks to promote public involvement in the process for deciding on aquaculture applications, Fisheries and Aquaculture may disclose application information – not including, however, personal or business confidential information – on the departmental website.

Privacy statement

The personal and business confidential information collected as part of an aquaculture application will only be used or disclosed by Fisheries and Aquaculture for the purpose of deciding on the application.

All application information collected is subject to the Freedom of Information and Protection of Privacy Act (“FOIPOP”) and will only be used or disclosed in accordance with FOIPOP.

For more information

If you would like further information, please contact the Nova Scotia Department of Fisheries and Aquaculture, Aquaculture Division.

Phone: 902-875-7439

Fax: 902-875-7429

Email: aquaculture@novascotia.ca

Mail: 1575A Lake Road
Sandy Point, NS
B0T 1W0

REQUIRED DEVELOPMENT PLAN CONTENT

Minimum content requirements for a Development Plan for an institutional licence application for a land-based aquaculture site are as follows (see below).

SECTION 1: PROJECT OVERVIEW

Provide a summary of the project, including the purpose of the project, its species, scale, technology used, and proposed location. Identify any partners participating in the project.

SECTION 2: TECHNICAL VIABILITY

2.1 Institutional plan

Describe your institutional plan in terms of production. Provide a description of the methods that will be used to conduct the institutional activities. This description must justify the production numbers and scale of the development of the activities to be conducted and the location chosen for the research.

For each fish (shellfish and/or finfish) species to be reared describe the following:

- Species and strain (if applicable);
- Stock source;
- Maximum site biomass (kg);
- Maximum fish number;
- Maximum feed (annual total) (tons);
- Maximum tank density (kg/m³);
- Maximum total tank volume (m³);
- Intended initial stocking date;
- Expected FCR;
- Expected production period for each group or cohort; and
- What will be done with the fish / shellfish following the completion of the activities conducted on site.

For each plant species to be reared describe the following:

- Species and strain (if applicable);
- Stock source;
- Maximum site biomass (kg);
- Maximum fertilizer input (mass in kg and composition);

- Maximum tank density (kg/m³);
- Maximum total tank volume (m³);
- Intended initial stocking date;
- Expected production period for each group or cohort; and
- What will be done with the plants following the completion of the activities conducted on site.

2.2 Location

Briefly describe the location of the site. Provide the requirements listed below. Note that each map should have an inset map locating the site in the province, True North, and a scale in metric.

- Topographic map showing the general location of the site;
- Orthophoto map showing the general location of site;
- Diagram (sketch) of site layout drawn to scale including inlet and discharge lines;
- Property Identification Number(s);
- Watershed number; and
- Deed/lease agreement.

If any structures will be installed below the high-water mark (submerged land), a permit may be required from Nova Scotia Department of Natural Resources and Renewables (NSDNRR) (<https://novascotia.ca/natr/land/clo/>). Detail the status of this permit, if applicable.

If applicable, detail other permits required for access to or construction of the site and their status (e.g. right of way/ easement).

2.3 Water source

Describe the source(s) of water to be used for the operation and the maximum flow required (in L per day). Include salinity and temperature profiles, if available, and water composition analyses.

Activities associated with water withdrawal, diversion or storage may require obtaining an approval from or providing notification to Nova Scotia Environment and Climate Change (NSECC) according to the Activities Designation Regulations made under Section 66 of the *Environment Act* (https://novascotia.ca/just/regulations/regs/envactiv.htm#TOC1_1). Detail the status of the required notifications or approvals, if applicable.

If you will be drawing water from the ocean or a lake, or another navigable water body in a way that requires a structure, device or thing—temporary or permanent—made by humans' that is in, on, over, under, through or across any navigable water, complete Section 4.1. This will assist in determining whether an approval under the federal *Canadian Navigable Waters Act* (CNWA) is required.

If you will be drawing water from a water body using a structure that is already approved; or for which it has already been determined that an approval under the CNWA is not required, indicate this, and describe the intake structure and how it was/will be installed.

2.4 Water discharge

Describe the water treatment prior to discharge, where the water will be discharged to, and how much will be discharged on a daily basis.

If you will be discharging the water into the ocean or a lake, or another navigable water in a way that requires a structure, device or thing—temporary or permanent—made by humans, that is in, on, over, under, through or across any navigable water, complete Section 4.1. This will assist in determining whether an approval under the CNWA is required.

If you will be discharging water to a water body using a structure that is already approved; or it has already been determined that an approval under the CNWA is not required, indicate this, and describe the discharge structure and how it was/will be installed.

2.5 Infrastructure

Describe the infrastructure required to support operations (e.g., site access, buildings, wharves, transportation, electrical supply, etc.), and whether it is existing or it will be built or acquired. Include the location(s) of the existing or pending infrastructure.

2.6 System

Describe the system design that details water flow (volumes in lpm = liters per minute), fish/plant holding units (materials of construction and volumes), water treatment methods, if they exist (with minimum dosage or treatment level described in metric units), and other equipment.

Water flow descriptions should include incoming flows, flows to each system or unit, and outgoing flows. Flows can be described via a process flow diagram(s).

List the units (e.g. tanks, ponds, silos, incubators, etc.) used for holding the eggs, larvae, fish or plants when at full capacity.

Water treatment descriptions should include the following, as applicable:

- Treatment of incoming water (temperature control, filtration, degassing, pH control, ozone, UV, etc.);
- Rate(s) of re-use of water, if applicable;
- Water treatment that may happen during water distribution, re-use or recirculation (temperature control, filtration, degassing, pH control, ozone, UV, etc.);
- Oxygen supplementation;
- Emergency power back-up, other required emergency back-up; and
- Other water treatment. Process flow diagrams can assist with the descriptions.

2.7 Containment

For all finfish facilities, describe structures and procedures to be used at the site, including monitoring, that will ensure effective fish containment.

For finfish, shellfish and/or plant facilities that will house exotic or non-native species or strains, contact the Department to determine the containment and quarantine requirements. If applicable, describe the systems and procedures, including monitoring, that will ensure these requirements are met.

Describe if the site is prone to flooding. If yes, describe mitigative measures to be used to protect against flooding.

2.8 Site history

If applicable, describe past use of the site.

2.9 Technical ability

Describe the technical ability that will be available to ensure that the activities will be properly conducted. Identify and include the resumes, qualifications and specific knowledge of any people involved in the design, monitoring, analysis, and reporting of the results of the activities.

2.10 Compliance History

Describe your record of compliance in previous aquaculture operations or in other operations that required management and monitoring of environmental effects.

List any enforcement issues of the past and explain how they were resolved.

SECTION 3: FINANCIAL VIABILITY

3.1 Financial ability

Describe your financial ability to carry out the proposed activities. This should include historical and projected financial resources; historical Income Statements including revenues, expenses, and earnings before interest, taxes, depreciation, and amortization (EBITDA) for the past three years (if applicable) and one projected production cycle forward. This could also include strategic relationships that can assist with the viability of the proposed activities; or other relevant information to demonstrate the financial ability to execute the proposed activities.

Include a brief description of previous business ventures, if applicable.

3.2 Potential economic impact

Describe the impact potential of the outcomes of the institutional activities in terms of economic development.

This should include what impacts could be expected, including:

- Benefits to current industry practices, economies, efficiencies, or scale;

- Potential for the development of new industry practices, new species, or expansion of suitable locations for aquaculture development; and
- Other benefits that will promote economic growth.

This should also include the economic potential of these impacts in terms of

- Infrastructure;
- Services and suppliers;
- Employment; and
- Other economic contributions to the local community and the Province.

If applicable, describe possible adverse impacts of the outcomes of the institutional activities on the economic development of the community and the Province and how these will be mitigated.

SECTION 4: OTHER USERS OF AREA SURROUNDING THE PROPOSED AQUACULTURAL OPERATION

4.1 *Canadian Navigable Waters Act (CNWA) approval*

If the water source(s) or discharge(s) require(s) changes or additions of, or to, any structure, device or thing—temporary or permanent—made by humans, that is in, on, over, under, through or across any navigable water, provide proof of a valid Navigable Waters Approval issued by Transport Canada. If you do not have a valid Navigable Waters Approval, please apply online at <https://tc.canada.ca/en/programs/navigation-protection-program/works-navigable-waters-canada>.

APPENDIX A

NOVA SCOTIA AQUACULTURE REGULATIONS

Fisheries and Coastal Resources Act S.N.S. 1996, c. 25:

<http://nslegislature.ca/legc/statutes/fisheries%20and%20coastal%20resources.pdf>

Aquaculture Management Regulations made under Section 64 of the *Fisheries and Coastal Resources Act*. S.N.S. 1996, c. 25 O.I.C. 2015-339 (October 26, 2015), N.S. Reg. 348/2015:

https://www.novascotia.ca/JUST/REGULATIONS/regs/fcraquamgmt.htm#TOC1_1

Aquaculture Licence and Lease Regulations made under Section 64 of the *Fisheries and Coastal Resources Act*. S.N.S. 1996, c. 25 O.I.C. 2015-338 (October 26, 2015), N.S. Reg. 347/2015:

<https://novascotia.ca/just/regulations/regs/fcraqualiclease.htm>

APPENDIX B

ADDITIONAL RESOURCES AND CONTACT INFORMATION

Below is a list of reference websites or sources that the proponent may find helpful in gathering information relating to fisheries and wildlife:

- Nova Scotia Department of Natural Resources and Renewables (NSDNRR): <https://beta.novascotia.ca/government/natural-resources-and-renewables>
- Nova Scotia Department of Environment and Climate Change (NS-ECC): <https://novascotia.ca/nse/>
- Nova Scotia Provincial Coastal Resources Coordinators (CRC): <https://www.novascotia.ca/fish/documents/crc-map.pdf>
- Fishermen & Scientists Research Society: www.fsrns.ca
- Nova Scotia Fisheries Sector Council: www.nsfsc.ca
- Fisheries and Oceans Canada: www.dfo-mpo.gc.ca
- Nova Scotia Salmon Association: www.nssalmon.ca
- Atlantic Salmon Federation: www.asf.ca
- Local salmon or angling associations
- SARA Registry: www.sararegistry.gc.ca
- CWS EA Guidance: https://www.collectionscanada.gc.ca/eppp-archive/100/200/301/environment_can/cws-scf/occasional_paper-e/n110/pdf/EA_Best_Practices_2004_e.pdf
- Committee On the Status of Endangered Wildlife in Canada: <https://www.cosewic.ca/index.php/en-ca/>
- Atlantic Canada Conservation Data Centre: www.accdc.com
- Second Atlas of Breeding Birds of the Maritime Provinces: www.mba-aom.ca
- Important Bird Areas of Canada: www.ibacanada.com/
- Western Hemisphere Shorebird Reserve Network: www.whsrn.org/
- North American Waterfowl Management Plans: www.nawmp.org
- Federal Policy on Wetland Conservation: <https://publications.gc.ca/site/eng/100725/publication.html>
- Implementation guide for federal land managers: https://nawcc.wetlandnetwork.ca/Fed%20Policy%20Wetland%20Conserv_Implement%20Guide%20for%20Fed%20Land%20Mgrs.pdf
- Wetlands of the Maritime Provinces: Revised Documentation for the Wetlands Inventory (1996): https://publications.gc.ca/collections/collection_2018/eccc/cw69-5/CW69-5-267-eng.pdf
- Ducks Unlimited: www.ducks.ca
- RAMSAR Sites: www.ramsar.org
- Environment Canada's Protected Areas Network: <https://www.hww.ca/en/>
- Nature Conservancy of Canada: www.natureconservancy.ca
- Federation of Nova Scotia Naturalists: <https://naturens.ca/>
- Nova Scotia Nature Trust: www.nsnt.ca/
- Other federally or provincially designated ESAs

- Canadian Wildlife Service (CWS): <https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/canadian-wildlife-service-contact-information.html>
- Local naturalist groups
- Fisheries and Oceans Canada Library: <http://science-libraries.canada.ca/eng/fisheries-oceans/>
- Transport Canada Navigation Protection Program - Forms and Guidance Material: <https://www.tc.gc.ca/eng/programs-624.html>