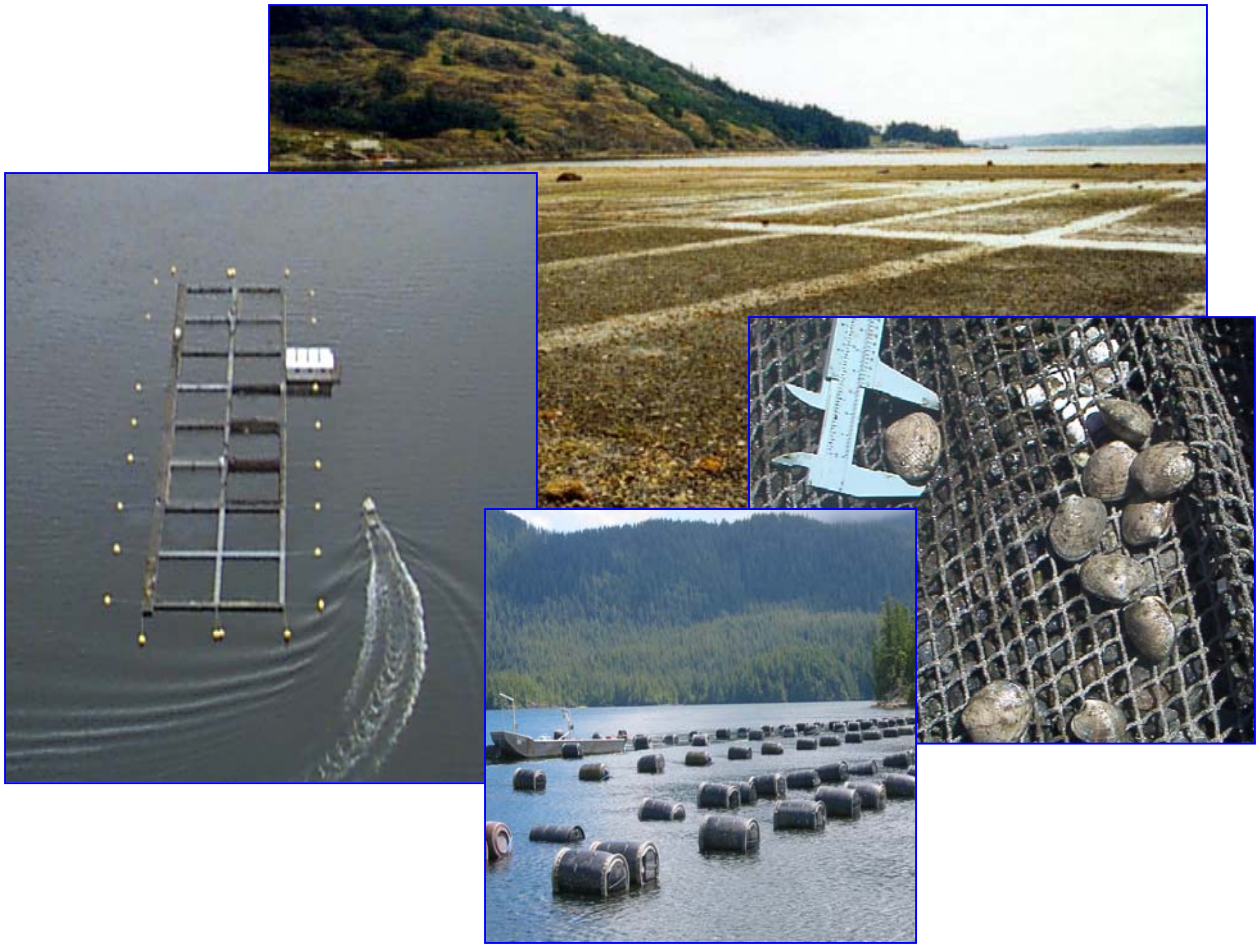
Aboriginal Aquaculture Association

Aboriginal Certification of Environmental Sustainability in Aquaculture (ACES Program)

Proposed Operational Framework



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Proposed Operational Framework

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1.0 INTRODUCTION

This document presents the developmental and operational framework for an Aboriginal Certification of Environmental Sustainability (ACES) program. The program has been envisioned as a hierarchical management system that includes farm-specific Codes of Practice and environmental compliance protocols, Territory-specific operational standards, and a regional (coastal) management framework for assessing performance, assigning Certification levels (branding, labeling, incentives, etc.), and ensuring that the adopted ACES Program is seen as a common initiative across the entire coast of British Columbia (the single voice concept).

This project was requested by the Aboriginal Aquaculture Association (AAA) and was intended to provide an ACES Program concept as a basis for discussion among First Nation members of the Association. The proposed program has been developed as a generic model that will allow inclusion of all types of aquaculture facilities, and could be used for other resource-based activities proposed for First Nation territories that would have environmental impact implications.

1.1 Environmental Sustainability

The United Nations Food and Agriculture Organization (FAO) defines environmental sustainability as "*Meeting the needs of the present without compromising the ability of future generations to meet their needs*." This definition requires, for example, that mankind keeps population densities below the carrying capacity of a region, facilitates the *renewal* of renewable resources, conserves and establishes priorities for the use of non-renewable resources, and keeps environmental impact below the level required to allow affected systems to recover and continue to evolve.

In a simple, yet technical-based definition, Environmental Sustainability has also been described as the "*long-term maintenance of ecosystem components and functions for future generations*". Linking economic, social, institutional and environmental aspects of human society this concept is intended to be a means of configuring civilization and human activity so that society, its members and its economies are able to meet their needs and express their greatest potential in the present, while preserving biodiversity and natural ecosystems, and planning and acting for the ability to maintain these ideals indefinitely.

Although sustainability values may vary greatly among cultures, there is a fundamental commonality among these details that is best described as a "*parallel care and respect for the ecosystem and for the people within*". From these common values emerges the goal of sustainability: *to achieve human and ecosystem well-being together*. It thus follows that the result against which the

success of any project (including an aquaculture operation) be judged/certified is the achievement of, or the contribution to, human and ecosystem well-being together. In this way, the concept of sustainability can be considered a positive concept that has as much to do with achieving well-being for people and ecosystems as it has to do with environmental protection.

As summarized by Hargroves & Smith (2005) a number of common principles are inherent in most programs that aim to achieve sustainable development or environmental sustainability. These include:

- dealing cautiously with risk, uncertainty and irreversibility;
- ensuring appropriate valuation, appreciation and restoration of nature;
- integration of environmental, social and economic goals in policies and activities;
- equal opportunity and community participation;
- conservation of biodiversity and ecological integrity;
- ensuring inter-generational equity;
- recognizing the global dimension;
- a commitment to Best Practice;
- no net loss of human or natural capital;
- the principle of continuous improvement;
- and the need for good governance.

While it is clear that the concept of environmental sustainability for coastal aquaculture will share a common generic definition for both aboriginal and non-aboriginal communities, it is equally clear that there may be many specific values that will differentiate how this sustainability is adjudicated and subsequently certified. Furthermore, it is most likely that environmental performance (one measure of sustainability) will also vary among coastal First Nation peoples, with each territory identifying and/or prioritizing values for sustainability in a different manner.

The development of a strong and all-encompassing Environmental Sustainability program for aboriginal aquaculture (including non-aboriginal participants) will necessarily require consideration of the differences in the sustainability values held by these diverse groups and among their different cultures. The development of an ACES Program that recognizes this diversity will ensure that all values are appropriately included within an operational framework, and will thus be considered in *certifying* compliance with the protocols and practices that protect these values.

2.0 FIRST NATIONS & ENVIRONMENTAL SUSTAINABILITY

First Nation people have historically been recognized as environmental stewards in light of their dependence upon and protection of the renewable natural resources within their respective territories. Although environmental sustainability is a concept that is embedded within First Nation society, the development of a formal process by which these values can be expressed and incorporated within the context of an objective management framework is a new approach for many of these coastal nations.

2.1 The Need to Identify First Nation Criteria for Environmental Sustainability

The key to the development of an environmental certification program, be it for aquaculture or other commercial activities conducted with First Nation territories, is the process by which specific criteria for environmental sustainability can be assessed. As outlined in Section 1.0 of this document, sustainability criteria will typically comprise a combination of natural resource protection and a recognition and application of the net loss principles associated with risk assessment.

Environmental Performance criteria will need to be identified in support of an environmental certification program, and given historical First Nation concerns over traditional use fisheries and habitat, these values will be the focus of criteria developed in support of farm siting (proximity to critical values) and farm operation (impacts that may have a short or long-term affect on these valued resources).

2.2 What Do We Certify?

Development of an Aboriginal Certification of Environmental Sustainability (ACES) Program for aquaculture need not start at the very beginning and create its own: (i) Code of Practice for all aquaculture operations; or its own (ii) monitoring and audit structure to measure compliance to its management system.

As a concept, the development of an ***ACES Program*** should be relatively uncomplicated. In essence, the program should simply ensure that all First Nations criteria for environmental sustainability are identified, that these criteria are incorporated into an appropriate farm management system, and that there is a monitoring/audit function to confirm compliance with these aspects. The *certification of this process* can subsequently be based upon a measure of performance determined through the monitoring, or simply through indication of a quantifiable commitment to address these issues while not having an irreversible affect on the environment.

3.0 THE *ACES PROGRAM* CONCEPT & OPERATIONAL FRAMEWORK

The following sections of this document present the structural and operational framework for a proposed **A**boriginal **C**ertification of **E**nvironmental **S**ustainability (ACES) Program. While the ACES Program concept has been developed in consideration of coastal aquaculture, the proposed structure would also apply to any activity that might in any way affect the natural resources, and hence environmental integrity, within the traditional territories of our First Nation communities.

3.1 Integration with Existing Programs

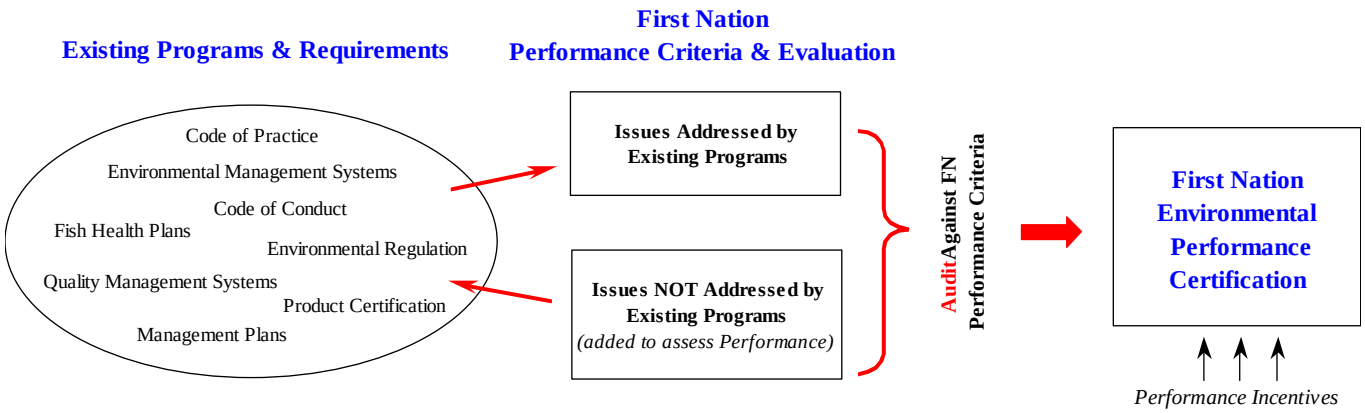
The development of a single Code-of Practice, Environmental Management System, or other Environmental Sustainability program that would adequately reflect the environmental issues associated with the various types of aquaculture and the definitions of sustainability (critical aspects) across the First Nation territories of coastal British Columbia is considered improbable, and arguably impossible. As noted in the previous section of this report, many examples of Code of Conduct, Management System structure, Hazard Assessment and Process control, etc. are available within the agri-food industry sectors (including seafood), although most have been designed to reflect specific food productions sectors and do not typically encompass a wide range of methods and/or species.

The proposed Aboriginal Certification of Environmental Sustainability (ACES) Program, rather than representing a new and unique system for measuring and assessing environmental sustainability performance, has been structured so as to build upon existing industry sector codes, regulatory compliance frameworks, and individual corporate management commitments. The ACES Program recognizes these requirements as a valuable source of *environmental performance* information and hence represents a system by which regional First Nations can integrate their specific sustainability criteria into this existing structure and thereby take advantage of the associated compliance monitoring

Figure 1 provides a diagrammatic summary of the proposed linkage between First Nation Environmental Performance Criteria, the existing environmental programs and regulations associated with coastal aquaculture, and the recommended role of the ACES Program in an audit and certification function. As seen in this figure, there are many types of Codes, Best Practices, Management Systems, and regulations associated with aquaculture. These operational requirements address a broad range of environmental aspects, including species health (husbandry, use of therapeutic compounds), water quality, seafloor impacts, emergency preparedness and response, use of chemicals, navigational constraints, conflict with other resource uses, etc.

Figure 1

Integration of an Aboriginal Certification of Environmental Sustainability (ACES) Program with existing environmental programs and management systems



While existing systems, programs and regulations are intended as a comprehensive approach to ensuring environmental protection, and hence operational sustainability, these initiatives may not necessarily address all values of First Nations communities along the coast. Thus, the integration of the ACES Program within an operational framework comprising existing programs would provide the most value (by avoiding redundancy) by focusing on the *environmental performance criteria* that critically allows an assessment of First Nation issues regarding aquaculture facility operations and the potential affects of these operations on coastal values.

As further illustrated within Figure 1, an effective ACES Program would leave most of the required monitoring and reporting to existing programs, while comprising an audit component that would examine compliance records in terms of those *environmental performance criteria* specific to First Nation values and operational concerns.

AAA-Certified Sustainable Environmental Management Practices

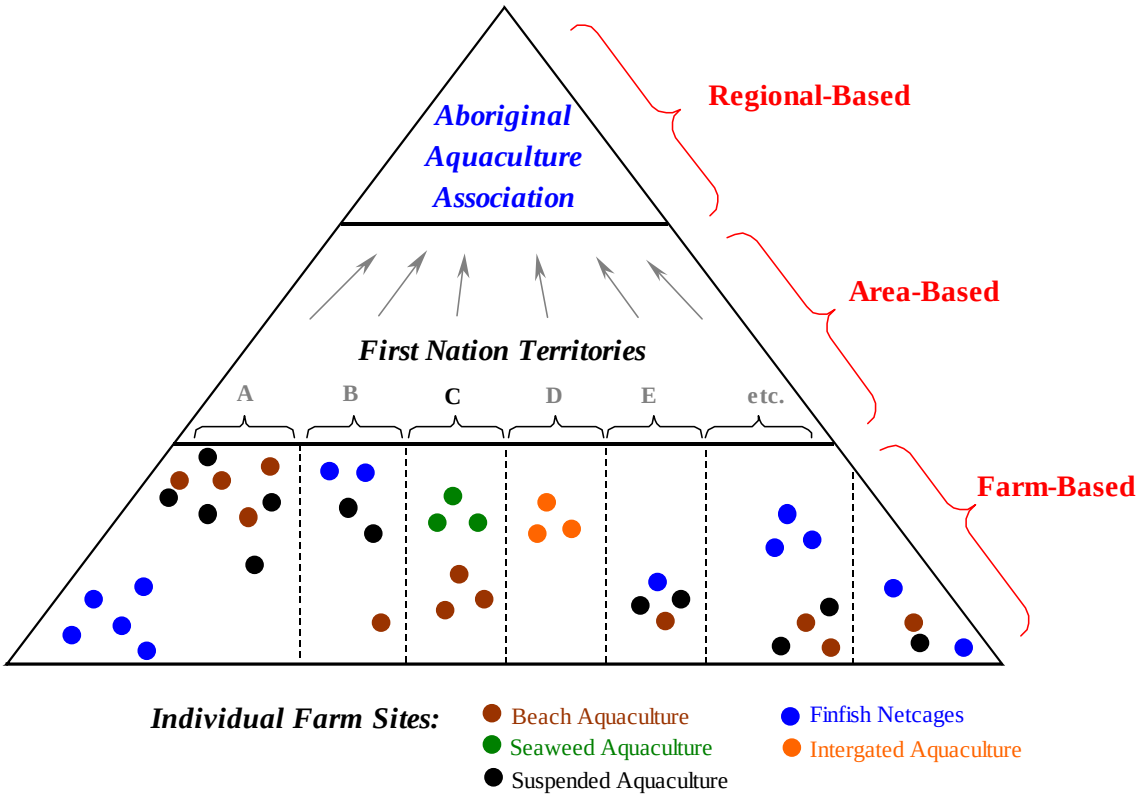
ACES Program audit results could then be used to grant corporate Certification, and assuming that this program would represent a National initiative, the benefits of participation in and conformance to the *Environmental Performance Criteria* could include such incentives as labeling opportunities, packaging artwork and standardization, etc.

3.2 ACES Program Structure

The proposed ***ACES Program*** comprises a 3-tiered operational framework as depicted in Figure 2. The program includes a Farm-Based Component, and Area-Based Component and a Regional-Based Component, the combination of which will facilitate the inclusion of aquaculture operational diversity within a First Nation territory (individual farms), the potential territorial differences in defining and measuring environmental sustainability, and the inherent need of a successful Certification Program to maintain a single, regional, coordinating body.

Figure 2

The 3-tiered operational structure of the proposed Aboriginal Certification of Environmental Sustainability (ACES) Program; Farm-Based, Area-Based and Regional-Based components maintains effective program implementation while ensuring that local (and differing) First Nation issues and values are included as Environmental Performance Criteria within the operational framework.



The 3-tiered pyramid concept for the proposed ***ACES Program***, presented in Figure 2, illustrates the potential diversity and differences in aquaculture development among coastal First Nations. In this hypothetical example, individual territories vary both in the type of aquaculture and number of operating sites (coloured dots). This difference may reflect the capability of the territory to support specific aquaculture types (environmental conditions for the culture species), and/or the community preferences in supporting particular aquaculture opportunities given their risk management criteria, sustainability values, etc.

The real differences that exist among the coastal First Nations in terms of aquaculture development potential indicates (in part) why a single, all-encompassing environmental management or code of conduct system can not be considered a practical option as a basis for a certification program. The proposed ***ACES Program*** has been designed to recognize and consider differences in values, development sensitivities, and in area capabilities.

3.3 Farm-Based Component

British Columbia aquaculture is currently represented by two predominant production sectors, finfish (salmon, trout) and shellfish (clams, oysters, scallops, mussels). These aquaculture sectors operate in a wide range of coastal habitats, with operations developed on beaches, nearshore subtidal waters and offshore deepwater. Figure 3 provides a summary of the various types of aquaculture currently being conducted (or considered) within coastal British Columbia. The various culture species are shown by production method and in relation to the depth range within which they are operated (and hence proximity to other natural resources).

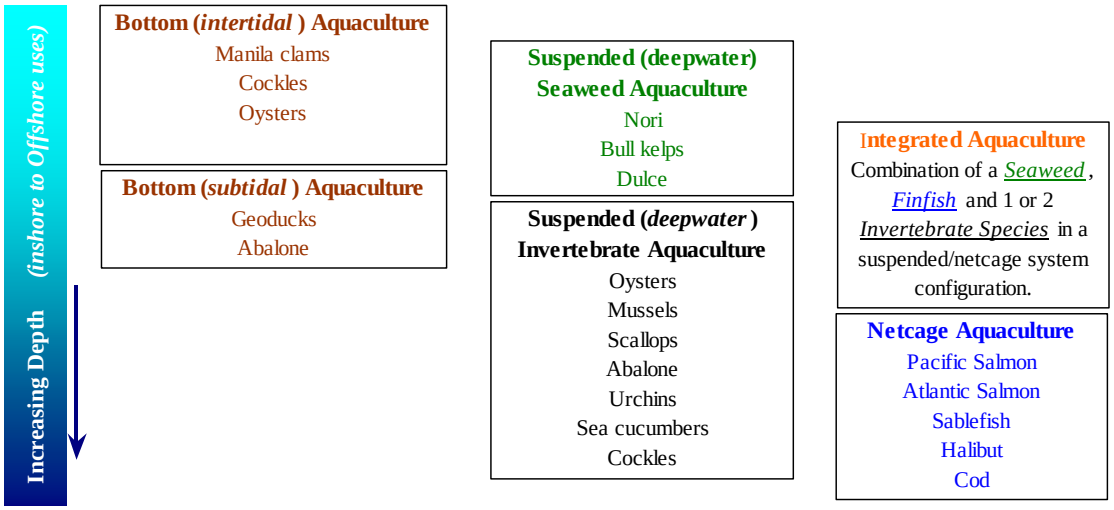
There is a suite of regulations that currently govern the siting and operating of these aquaculture facilities in British Columbia. The bottom portion of Figure 3 provides a list of most of these Federal and Provincial regulations, which jointly address many of the environmental issues associated with the various aquaculture approaches. These regulations, and their associated monitoring and reporting requirements, consider environmental aspects such as aquatic species health, application of chemotherapeutics, habitat impacts, fisheries, water quality, navigation, resource conflict, etc. Each farming company must comply fully with the provisions of these regulations as they pertain to the species under culture, configuration and location of farm infrastructure, and operating production levels.

In addition to the legal (regulatory) requirements of operating an aquaculture facility in British Columbia, the industry sectors (finfish, shellfish) and most farm companies, have developed corporate systems/programs for managing their respective environmental and product quality issues. Figure 3 lists the various Codes, Best Practices, and Management System frameworks that are currently

employed at the corporate level. These initiatives typically encompass the legal requirements of the operation, but also extend to seafood quality, public complaints and product satisfaction, key environmental aspects (real and perceived), husbandry and production issues, and participation in pertinent research. These systems and programs are typically designed to address and solve problems/inefficiencies within the farm practice, and will strive to demonstrate continual improvement (and sustainability) of the operation.

Figure 3

Farm-Based ACES Component illustrating various types of aquaculture (species, physical requirements) and examples of the present operational commitments to environmental sustainability that are required of farm facilities through Federal and Provincial policy/regulation, industry Codes of Conduct, and self-directed management systems. The incorporation of FN sustainability criteria are proposed for inclusion to the current structure rather than creating a new, independent (and necessarily complex) environmental sustainability system upon which to base a Certification Component



Operational Commitments to Environmental Sustainability:

Corporate and/or Industry Sectors: *Best Practices, Environmental Management Systems (e.g., ISO-14000), HACCP, Fish Health Management Plans, Production Management Plans, BCSFA/BCSGA Code of Practices, etc.*

Federal Government Regulations: *Fisheries Act, Canadian Environmental Assessment Act (CEAA), Navigable Water Protection Act (NWPA); Canada Shipping Act – Small Vessel Regulations*

Provincial Government Regulations: *BC Fisheries Aquaculture License, Fish Health Standards; Fisheries Act; Feeds Act; Pest Control Act; Aquaculture Regulation; BC Veterinary Medical Association By-Laws & Code of Ethics; Fish Protection Act; Pesticide Control Act; Pharmacist Act; Pharmacists, Pharmacy Operations & Drug Scheduling Act; Veterinarians Act; Waste Management Act (Finfish Aquaculture Waste Control Regulation); Environmental Management Act.*

Farm-Based ACES Component

To eliminate redundancy, and the inherent complexity of developing a unique Management/Certification program that would cover all aquaculture sectors and issues, the proposed Farm-Based Component of the ***ACES Program*** will recognize and incorporate all of these existing regulations and farm management systems in its operational framework. Given a set of Area-Based First Nation Environmental Performance Criteria, the farm-based component will simply ensure (through an audit function) that these specific First nation issues/values are appropriately addressed within the existing farm-based systems and programs. Quantification of environmental performance would be achieved through the existing monitoring/compliance requirements of the farms, with data from these programs used by the ACES Program as the basis for certification.

3.4 Area-Based Component

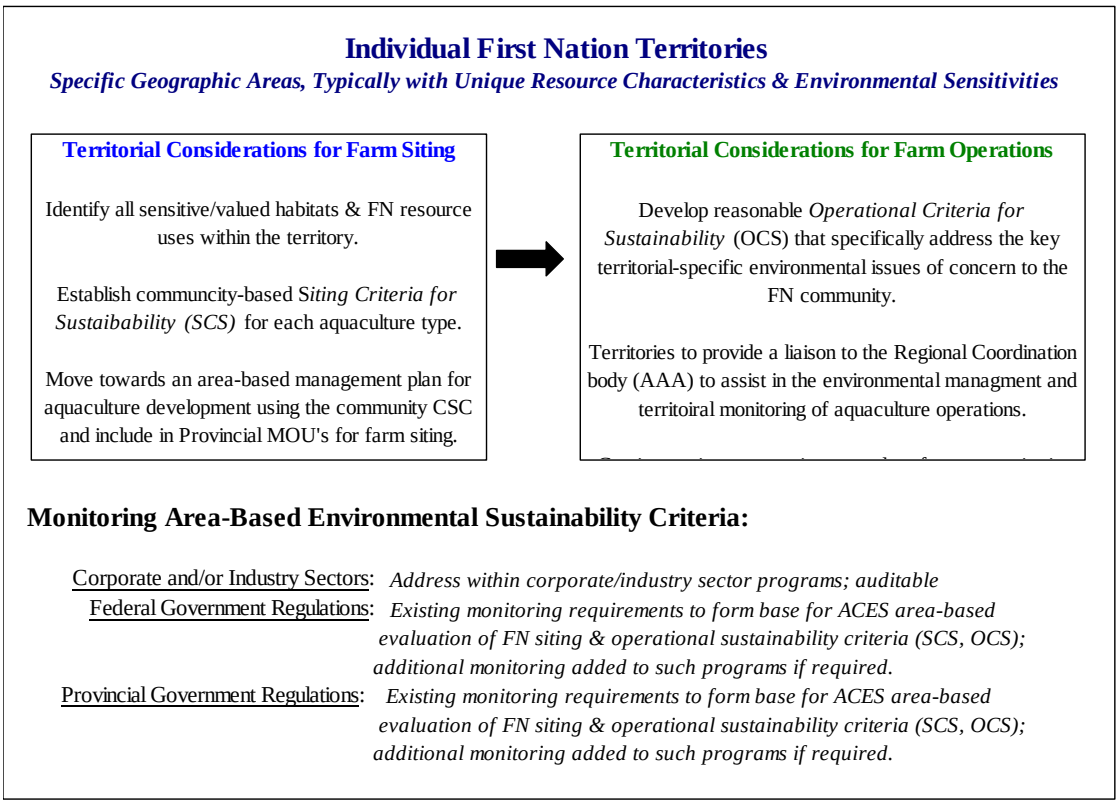
The Area-Based Component of the ***ACES Program*** is designed to address the specific territorial differences that may exist among the First Nations of coastal British Columbia. Each First Nation community would develop its own *Environmental Performance* criteria that would address area-specific issues of farm siting (e.g., proximity to valued resources; protection of wildlife or fisheries species; social values; operation preferences) and farm operations (e.g., use of antibiotics; sea lice issues; marine mammal control; fish escape prevention; fuel management considerations). Development of area-specific Siting Criteria for Sustainability (SCS) and Operating Criteria for Sustainability (OCS) would then form the basis for measuring environmental performance, with respect to sustainability, and thus the criteria upon which aboriginal certification could be assigned.

Audit of existing farm-based programs and systems would be conducted to ensure that all of these performance criteria (CSC, OSC) were being appropriately addressed by farms operating within each territory. Similarly, quantification of Environmental Performance, through existing corporate monitoring programs and regulatory compliance requirements, would require evidence that the Area-Based criteria were incorporated within these initiatives. Data acquired from routine corporate or government monitoring, and audited by Area-Based First Nation participants, would be used as the basis for evaluating compliance and performance with the Area-Based criteria and determining if certification with the ***ACES Program*** was warranted.

Figure 4 provides an illustrative summary of the Area-Based Component of the proposed ***ACES Program***. The requirement to develop territorial-specific siting and operating criteria, to incorporate performance measures within existing monitoring initiatives, and to provide an operational link (liaison) with a Regional Coordination Body for the ACES Program (to complete the certification process) are key aspects of this component of the proposed program.

Figure 4

Area-Based ACES Component proposes the development of aquaculture farm siting and operational (Environmental Performance) criteria within each FN territory to ensure unique resource characteristics and environmental sensitivities are adequately protected. The incorporation of these FN siting (SCS) and operational (OCS) sustainability criteria are proposed for inclusion to the current environmental monitoring structure required of aquaculture proponents rather than creating a new, independent (and necessarily complex) monitoring system.



3.5 Regional Component

The overall coordination and certification component of the proposed ***ACES Program*** requires a single, unifying body. As a regional body (Pacific, Atlantic, Central) this operational component of the program would be responsible for facilitating First Nation territorial participation in the ACES Program (Area-based Component), for coordinating monitoring initiatives with Federal and Provincial counterparts, and for developing and maintaining a Certification component to the program for the benefit of the corporate aquaculturalists within the region.

The ***Regional ACES Program*** body would be responsible for training program auditors, assisting First Nation members in developing their Area-Based Sustainability criteria, compiling and assessing Environmental Performance data, and for maintaining corporate certification records. This body could also, at the direction or request of specific First Nation territorial members, assume responsibility for program auditing.

Figure 5 illustrates the role of the ***Regional ACES Program*** body in relation to farm-based and area-based components, and suggests as a start, that for the Pacific Region (coastal British Columbia), that this role be assumed by the Aboriginal Aquaculture Association (AAA). While most of the operational components of the program will be dealt with within the Area-Based (territorial performance criteria) and Farm-Based (monitoring) components, the need for an umbrella organization that will provide consistency to the program is essential.

Figure 5

Regional-Based ACES Component proposes that the Coordination and Certification role for the ACES Program be developed through Regional or National First nation organizations. For the Canadian west coast the Aboriginal Aquaculture Association is proposed as the umbrella organization for facilitating FN membership participation in the ACES Program, for coordinating monitoring initiatives with Federal and Provincial counterparts, and for developing and maintaining a Certification component to the program for the benefit of all aquaculturalists within the region.

Regional-Based ACES Component

3.6 Program Monitoring, Auditing & Certification

A major factor in determining the successful development and implementation of a regional/national ***ACES Program*** is the reporting framework that will be used. The system needs to be sufficiently flexible to allow for the specific issues that affect each First Nation territory (Area-Based Component) whilst recognising the need to ensure that where possible, issues are treated in a consistent manner (Regional Coordination Component).

It is therefore proposed that although the Area-Based Component of the ***ACES Program*** will ensure that territorial-specific environmental issues are addressed by aquaculture operations, that the information analysis (monitoring data) and audit results acquired from the Farm-Based Component be compiled and evaluated in a *consistent* and in an *arms-length* manner. Use of the Regional Certification Body in this role would allow considerable objectivity to be applied to the subsequent certification process.

Certification of a company/farm within the proposed ***ACES Program*** will require development of a set of evaluation criteria that can be applied to the monitoring/audit information acquired for these proponent operations. The Regional Certification Body (e.g., AAA) would identify these criteria, based on input from their First Nation membership, but would include factors such as the following:

- Does the corporate/farm location meet with the Territorial siting criteria (SCS) specified for the facility type?
- Does the corporate/farm operation address all of the environmental issues (OCS) identified for the facility type through appropriate Best Practices?
- Does the corporate/farm operation implement monitoring programs specific to each of the First Nation performance criteria?
- Does Environmental performance on each of the issues ensure that the options available for future generations are not unreasonable constrained?
- Does Environmental performance on each of the issues demonstrate a continual improvement over time?
- Does the knowledge regarding each of the issues assure that the measurable affects are reversible and not of of an unacceptable magnitude?
- Is there a corporate/farm commitment to technological innovation and/or research to facilitate improvement in Environmental performance?
- Is there a corporate/farm commitment to resource enhancements within the Territory yet beyond the direct affects of its own operation?

The performance of corporations or specific farm operations with respect to established Environmental Performance Criteria, defined in terms of these sustainability attributes (as an example), would then be used to determine Certification to the ACES Program. The conditions of Certification, including length of time, level (if a scale is considered) could then be developed from the responses to this evaluation.

3.7 *ACES Program* Compliance Incentives

It will be the role of the National and Regional ***ACES Program*** bodies to promote the proposed certification program to seafood markets within and outside of Canada. Strong recognition of this certification process, given its premise on *environmental sustainability*, is considered key to its success and to ensuring that farms and companies will insist on participating in the program.

The Aboriginal Aquaculture Association will need to work with industry sectors, government regulators, and with seafood wholesalers/retailers to develop this recognition. It is clear that once this program has been developed and promoted, that participation will be forthcoming despite any initial and explicit benefits associated with the process.

It is anticipated that as the ***ACES Program*** develops, and the First Nation and corporate membership grows, that the inherent benefits of the program will evolve and incentives to participation realized. Development of a recognized certification branding/labeling, use of territorial-specific artwork for sustainable aquaculture promotional use, annual awards programs for outstanding companies/farm operations, associated national advertising and promotions, etc. would represent minimal incentives for participation in the Program.

Participation in and compliance with the ***ACES Program*** will hopefully evolve into a trusting and mutually beneficial working relationship between aboriginal and non-aboriginal members of each Area-Based (territorial) component of the regional ACES network. It is envisioned that this relationship will provide its own incentives (and benefits) for co-management of an area, and thus ease of access to new aquaculture development opportunities and co-operative partnerships.

4.0 RECOMMENDED *ACES PROGRAM* DEVELOPMENT TASKS

The Aboriginal Certification of Environmental Sustainability (ACES) Program has been proposed as an approach to ensure that Canadian First Nation issues appropriately considered in the development and of aquaculture within their territories, and that these facilities are operated in a manner that is sustainable and consistent with the environmental values of these coastal communities. The structure of the *ACES Program* was designed so as to build upon existing environmental management programs, systems and regulatory framework, while ensuring that all issues applicable to operational sustainability were recognized within the Program package.

The following sections outline a series of recommendations as to how the ACES Program can be developed and over the next 12-18 months.

4.1 Development Assumptions

Development of the *ACES Program*, as proposed in this document, assumes that the Aboriginal Aquaculture Association (AAA) will take the coordinating role for this initiative. The success of this program will, however, depend upon the participation of coastal First Nations as both members of the AAA and in developing territorial-specific Environmental Performance Criteria as the basis for Program implementation. It is also assumed that aquaculture companies, industry sector associations, and regulatory agencies will work with the AAA to facilitate the integration of these environmental criteria into existing monitoring, reporting and audit protocols.

4.2 Recommended Development Tasks

The development and implementation of the *ACES Program* will require completion of a number of tasks, many of which would most likely be completed concurrently. The following list outlines the key program development components, which is again assumed will be coordinated by the AAA – contract personnel or AAA staff may need to be retained to complete these program development tasks, with permanent positions created over the long-term to properly implement and manage the *ACES Program*.

- Solicit membership of as many First Nation Bands as possible in the *ACES Program*, and concurrently in the Aboriginal Aquaculture Association (AAA) as the Regional-Based *ACES Program* coordinating body.

- Develop and implement a process for identifying territory-specific environmental sustainability aspects (Area-Based environmental issues); assist individual Bands with this program component.

- Negotiate participation of government regulators, industry associations, and individual companies currently operating in First Nation waters, in the *ACES Program*; seek coordinated monitoring, reporting and audit roles for integrating the *ACES Program* in existing environmental initiatives and regulatory compliance requirements.

- Develop the Environmental Performance measures by which aquaculture operations can be certified within the ACES Program.

- Build an Environmental Performance database within AAA that can be used to compile and assess environmental sustainability for each participating site/company and aquaculture type.

- Create an audit component to the *ACES Program* that will complement existing requirements, but will allow AAA auditors to validate that ACES Program sustainability criteria are properly addressed within the existing program/system structures.

- Formulate an incentive component of the ACES Program to provide economic value to corporate participation in the program. Develop a national and seafood market awareness of the ACES Program with generic labeling, promotion, etc.

- Develop a concise *ACES Program* Manual for all participants (companies, associations, regulators) that will outline monitoring, reporting commitments, Environmental performance Criteria, audit requirements, certification framework, program review/upgrades, and program incentives. Timelines, frequencies and the *ACES Program* certification period should be clearly defined within this document.

It is highly recommended that a single coordinating body, such as the Aboriginal Aquaculture Association (AAA), be responsible for the development, implementation and management of the proposed *ACES Program*. The success of this program will depend upon its recognition and acceptance nationally as well as across the seafood markets in which all North American aquaculture products are sold. The '*single brand*' concept to this certification program will ensure that credibility evolves from a diverse First Nation as well as corporate participation in the initiative.

APPENDIX I

EXAMPLES OF ENVIRONMENTAL CERTIFICATION PROGRAMS

The development and implementation of a Certification Program typically comprises a component that will identify measurable attributes that can be 'certified'. These take the form of a Management System, Code of Practice, Code of Conduct, etc. The following sections provide examples of suchs programs, providing a web link to the system so that the detailed structure and function of the program can be evaluated independent of this review.

Examples from other Jurisdictions

The following examples of Certification Programs, Management Systems, and Codes of Conduct are provided across a variety of industry sectors, including aquaculture. The examples for aquaculture are provided from jurisdictions outside of Canada, while others may comprise programs from other Provinces.

Canadian Code of Practice for Environmentally Sound Hog Production
http://www.cpc-ccp.com/codes.html

The Code of practice describes environmentally sound practices for using storing and managing manure and other organic materials. Along with a summary of relevant government regulations, guidelines are also provided for site planning, operations, odour and pest control, waste handling, and other environmental impact management.

Environmental Code of Practice for Poultry Farms in Western Australia
http://portal.environment.wa.gov.au/pls/portal/docs/PAGE/DOE_ADMIN/GUIDELINE_REPOSITORY/POULTRY_0.PDF

The Code provides guidelines for planning, biosecurity and good management practices. It is supported by other Codes for the industry. The Code supports government decision making, ensures sustainable production practices, benchmarks farms and aids in Best Practice operation of farms.

Chevron Corporate Responsibility Report, Climate Change and Energy Efficiency
http://www.chevron.com/cr_report/2004/environmental/climate_change/

Chevron has developed a strategy to deal with the various environmental issues associated with its operations. The company has developed strategy elements in each area, and has stated key actions in each of those elements. These actions contain goals and Chevron measures and reports its activities against the goals.

Washington Fish Growers Association Code of Conduct for Saltwater Net-Pen Operations
http://www.wfga.net/conduct.asp

> The Code outlines practices that ensure that operations comply with existing regulations and conserve the marine ecosystem. It is based on other international Codes and is tailored to specific local conditions. The Code deals with environmental impacts, fish health and welfare, containment and regulatory requirements.

Australia Department of Agriculture, Fisheries and Forestry: Ecologically Sustainable Development Criteria & Indicators
http://www.affa.gov.au/content/publications.cfm?Category=Fisheries&ObjectID=CD662D73-F4D1-4BF7-BFD7A2B96063DDC9

> Australia defines Ecologically Sustainable Development as the need to integrate short and long term economic, social and environmental factors, so ESD is: 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'.
>
> ESD has become, either explicitly or implicitly, a major objective within most fisheries and environmental legislation in Australia and therefore management agencies are accountable for achieving these objectives. All Australian fisheries agencies are committed to implementing the principles of ESD.
>
> The National ESD Reporting Framework was developed to enable fisheries management agencies to measure and report on their progress in implementing ESD in their fisheries - Australia Best Practices plan.

Best Practice Framework of Regulatory Arrangements of Aquaculture in Australia
http://www.affa.gov.au/corporate_docs/publications/pdf/fisheries/best_practice_paper.pdf

> An initiative to provide a review and recommendations on how to progress toward "best practices" arrangements integrating the various regulatory requirements aimed at achieving ecologically sustainable development.

Aquaculture Association of Queensland: Environmental Code of Practice
http://www.aaq.com.au/enviroment.htm

> The Code provides best practice management techniques to minimize the potential of environmental impacts due to the culture of finfish in

Queensland. It includes regulatory compliance as well as self-regulating and voluntary elements.

Aquaculture Certification Council Certification of Aquaculture Production Processes for Seafood Buyers
http://www.aquaculturecertification.org/

The Council operates a certification system that combines site inspections with sampling, controls and traceability based on best management practices. Focusing on the process rather than the product, the Council acknowledges successful participation with its "Best Aquaculture Practices" certification mark. Farm practices covered include employee welfare, community relations, food safety, traceability and environmental impact management.

FAO

The FAO addresses responsible fisheries in several ways, including establishment of Best Practices in several industries. The overlying principles are developed in the FAO Code of Conduct for Responsible Fisheries.
http://www.fao.org/documents/show_cdr.asp?url_file=/DOCREP/005/v9878e/v9878e00.htm

This Code includes a section on Aquaculture Development (Article 9) that outlines responsibilities of the state dealing with aquaculture. It is an example of a fundamental check list that can support auditing and certification to demonstrate compliance with internationally accepted criteria.

Another FAO approach deals with an ecosystem approach to fisheries management.
http://www.fao.org/documents/show_cdr.asp?url_file=/DOCREP/005/Y4470E/Y4470E00.HTM

FAO provides a background for best practices in fisheries and aquaculture management and conservation.
http://www.fao.org/bestpractices/topics/topic6.jsp?lang=en

ECOPACT: Environmental Code of Practice for Irish Aquaculture Companies and Traders
http://www.bim.ie/uploads/text_content/docs/ECOPACT.pdf

The ECOPACT initiative is designed to establish Environmental Management Systems in the Irish aquaculture industry. It recognizes regulatory requirements, existing programs such as ISO 14001 and the

European Union Eco-Management and Audit Scheme (EMAS). For smaller companies ECOPACT assists with a nationwide and systematic EMS by providing guidelines, approaches, related codes and resource sources.

Federation or European Aquaculture Producers Code of Conduct for European Aquaculture: The Environment
http://www.aquamedia.org/consumer/codes/Conduct/FCenvironment_en.asp

The Code deals with water use and quality, site selection and management including escapes and drug use.

Marine Stewardship Council Certified Fisheries
http://www.msc.org/html/content_463.htm

The Council has established an environmental standard for sustainable fishing. It's Principles and Criteria are based on the FAO Code of Conduct for Responsible Fisheries. The scheme is voluntary and is based on independent certification against the standard. The certification includes traceability.

Environmental Certification in Canadian Aquaculture

Kingzett and Struthers provide a review of Certification Schemes in Aquaculture, http://www.shellfishquality.ca/Practices/Aquacert.htm. Examples of these programs, and their links, are provides as follows.

BC Fish Health Management Plans
http://www.agf.gov.bc.ca/fisheries/health/fhmp_Required_Elements_June-03.pdf

Compulsory fish health management plans for each fish production site in BC deal with a range of factors that affect environmental impact. Operation under these plans provides objective assurance that these aspects are dealt with.

CFIA On-Farm Food Safety Recognition Program
http://www.inspection.gc.ca/english/fssa/polstrat/reco/recoe.shtml

CFIA is developing programs with national producer associations. The programs are based on HACCP. On-farm programs are reviewed and assessed for conformity with various government regulations as well as producers' procedures and Codes. Acceptance by CFIA would provide confidence in many aspects of production.

Food Marketing Institute: Safe Quality Food Institute: SQF 1000 Code
http://www.sqfi.com/documentation/SQF1000_Code.pdf

The SQF Codes for aquaculture are under development with SOTA. The SQF 1000 Code provides certification for producers for food safety, quality management, animal welfare and related environmental considerations. It covers traceability, regulations, industry Codes and programs as well as company quality and management criteria. Certification by SQF provides customers to the retail level with clear identification of compliance with standards and Codes.

PEI Aquaculture Alliance: Shellfish Aquaculture Industry Environmental Policy
http://www.aquaculturepei.com/organization/policy.cfm

The Policy outlines shellfish practices that help ensure environmental responsibility, economic viability and maximum product quality.

PEI Fisheries and Aquaculture: Aquaculture Environmental Practices Program
http://www.gov.pe.ca/af/agweb/index.php3?number=78873&lang=E

The program provides incentives for enterprises to adopt procedures, practices and equipment that enhance environmental performance.