

# Independent Aquaculture Regulatory Review

## Roundtable Final Report

June 2014





## Roundtable Final Report



### Table of Contents

Foreword .....	1
Background and Process .....	3
The Recommendations in this Report .....	5
Guiding Principles .....	6
Recommendations .....	9
1. Roles and Responsibilities .....	10
2. Coastal Planning for Aquaculture .....	12
3. Public Engagement .....	14
4. First Nations .....	16
5. Environmental Impact Assessment .....	17
6. Use of Science and Traditional Knowledge .....	18
7. Siting Process .....	20
8. Closed Containment .....	22
9. Open-pen Practices .....	24
10. Integration of Other Processes .....	26
11. Decommissioning .....	27
12. Monitoring and Enforcement .....	28
13. Access to Justice .....	31
14. Regulatory Review and Improvement .....	32
Appendix A .....	33
Appendix B .....	47
Appendix C .....	53





## Roundtable Final Report

### Foreword

It was a pleasure and a privilege to facilitate the meetings of the Aquaculture Review Roundtable. The individuals who agreed to serve on the Roundtable gave many hours to this assignment, in some instances having to travel long distances in winter conditions to attend meetings. They received no remuneration other than expenses. The task was a challenging one. Discussions about aquaculture have polarized Nova Scotians for decades. But the Roundtable members tackled this task with fortitude, patience, mutual respect and good humour.

□

As author of this report, I have endeavoured to make a fair representation of the discussion and conclusions of the Roundtable. Members reviewed two drafts and made comments. However, the production of a collective document was complicated by the understandable fact that not all members could attend all meetings. The long list of possible principles and recommendations was generated collectively over several meetings. An informal straw vote process (yes/no/maybe) was used to help guide discussion of each of these items.

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Ideally there would have been sufficient time to revisit the straw vote results at the end with each member being asked to respond to the final wording of the principles and recommendations. But this simply was not possible. Therefore, given the approximate nature of the straw vote process (for example, not everyone responded to each item, often the wording changed after initial responses, and just over half of the Roundtable members were available for the final meeting), it made the decision to indicate general levels of support rather than providing a voting tally. However, it is important to note two things: (1) if someone thought an idea or a recommendation should be discussed, it was and it also appears in this report; and (2) the panel members were present for these discussions.

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In some cases it is possible that designations of qualified or partial support might have been upgraded, perhaps to unanimous. If time had been available to acquire more information or refine the wording of the principle or recommendation, several Roundtable members subsequently noted that their



## Roundtable Final Report

□ responses to certain recommendations would have been different if the recommendation had been unpacked' – in other words, if components within the recommendation had been separated out for discussion in particular, the view of the facilitator, the discussions on coastal planning and on siting criteria could have used more time □

□ While the Roundtable was meeting, the Department of Fisheries and Aquaculture was in the process of finalizing a report commissioned on the feasibility of closed containment systems. The Roundtable wrote to the Department formally requesting access to this report. The Department's response explained that the draft report was still being reviewed by an external steering committee and therefore could not be provided to the Roundtable. A number of Roundtable members were particularly frustrated that this document was not available to inform discussions of alternate aquaculture approaches □

□ Finally, I draw your attention to Appendix A, which contains final statements from some of the Roundtable members (all members were invited to provide a 300-word statement if they so wished) □

□ On behalf of both the Panel and myself, I want to express sincere appreciation to all Roundtable members for sharing your time, energy, knowledge and experience in order to make this significant contribution to the Aquaculture Regulatory Review process. The credit for the excellent ideas and advice contained in this report is yours; the responsibility for any errors and omissions is mine □

□  
Lesley Griffiths  
Roundtable Facilitator



## Roundtable Final Report

### Background and Process

The Government of Nova Scotia intends to develop and implement a new regulatory framework for the aquaculture industry that will meet the highest standards of effectiveness while balancing the interests of industry, other marine users, local communities, and environmental protection. The Nova Scotia Department of Fisheries and Aquaculture established an independent two-person Panel, consisting of Professors Meinhard Doelle and William Lahey of Dalhousie University, to develop this framework through a process designed to be independent, transparent, consultative, collaborative, analytically rigorous and evidence-based.

The Panel's review was guided by a seven-person advisory committee and the process included community meetings, the formation of a Roundtable, targeted stakeholder meetings, the involvement of experts through science and Traditional Knowledge Roster, a program to find community dialogue and research, and consideration of individual submissions.

In November 2013, nineteen individuals were invited from the aquaculture Review Roundtable. They brought with them knowledge and experience from many constituencies of interest, including First Nations, the aquaculture industry, the fishing industry, environmental and conservation organizations, coastal communities, municipalities, and tourism. Information about the Roundtable members is included in Appendix B. The Roundtable was facilitated by Wesley Griffiths. Secretariat services were provided by Vimy Glass, Nova Scotia Fisheries and Aquaculture, and the Panel members, Bill Lahey and Meinhard Doelle attended all meetings as observers. Minutes were posted on the Aquaculture Review website.

The purpose of the Roundtable was to provide feedback from a wide range of perspectives on (a) issues relating to the future sustainable development of aquaculture in Nova Scotia with respect to environmental protection, social well-being and economic opportunity and (b) the development of recommendations regarding a new regulatory framework. The terms of Reference for the Roundtable are in Appendix D.



## Roundtable Final Report



The Roundtable met once a month for six months starting in November, 2013. After this first one-day meeting, all subsequent meetings took place over two days, and the Roundtable covered the following areas:



November 1, 2013:

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- Introductions and process overview
- Revision and ratification of Terms of Reference
- Developed road map for future meetings

December 9-10:

- Regulation and policy context
- Discussed guiding principles for sustainable aquaculture development
- Developed questions to go forward to the Science and Traditional Knowledge Roster



January 9-10, 2014:

- Identification of issues and potential actions in relation to regulation of fish and shellfish aquaculture
- Presentation on aquaculture regulation by Scotland and Chile by Cecilia Engler-Palma, graduate student, Schulich School of Law



February 13-14:

- Began review of measures for possible recommendations
- Presentation on existing regulatory practice by members of Nova Scotia Fisheries and Aquaculture
- Discussion about open ocean fish aquaculture



March 20-21:

- Presentations on closed containment by Jeremy Lee, Sustainable Blue, Robin Stuart, Aquaculture consultant, and Brian Blanchard, Aquaculture Association of Nova Scotia
- Discussion of draft recommendations



April 10-11:

- Finalization of report





## Roundtable Final Report

### The Recommendations in this Report

The Roundtable served in an advisory role to the Panel. An important part of the Roundtable's mandate was to identify and further develop areas of common ground and seek consensus on specific issues where possible and appropriate. However, it was also expected and understood that agreement would likely not be attainable on all issues and the terms of reference indicated that diversity of views would be welcomed and recorded. In this regard, it was also very helpful that the members of the Panel attended the meetings and heard for themselves the discussions, particularly on more contentious issues.

□

Without attributing views to specific Roundtable members, this report endeavours to make it clear where there was consensus on a given recommendation, and where there was a difference of opinion. Given the time limitations, the Roundtable did not attempt a comprehensive review of all aspects of the regulatory system, but selected certain areas to work on. As a result, much of the focus was on open pen finfish farming although time was set aside to discuss shellfish aquaculture.

□

Potential recommendations were brought forward in two ways: (1) as suggestions put forward by individual members in writing between meetings in response to a request from the facilitator, and (2) as ideas emerging from general small or large group discussions. Amongst the potential recommendations was then prepared and members were polled in a straw vote to indicate "yes," "no" or "maybe." Each potential recommendation was then discussed to see if needed clarification and if adjustments could be made that would increase the level of support within the Roundtable.

□

In addition to the collective views represented in the body of this report, each Roundtable member was invited to contribute a short individual statement. These are included in Appendix A.



## Roundtable Final Report

### Guiding Principles

Early in the process the Roundtable initiated and discussed a set of guiding principles that should be the foundation upon which to develop the regulatory framework. The guiding principles were discussed on several occasions, amended and ultimately voted on. Roundtable members were asked to say yes, no and maybe to each principle. Not all members could attend the final meeting where this took place but were subsequently asked to review the final list. The guiding principles are sorted below into three categories:

- Those that received unanimous approval.
- Those that received outright support as worded from some members and conditional support ("maybe") from others.
- Those that received a mixed response with support from some perhaps conditional approval from others but also a note from at least one member.

#### Guiding Principles with Unanimous Support

The regulation of aquaculture should:

1. Recognize that the health of the economy, the environment and the people are interconnected.
2. Ensure the maintenance of long term ecosystem health in the areas where aquaculture takes place.
3. Embody the precautionary principle as defined in the Rio Declaration on Environment and Development, 1992: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation".
4. Ensure that the net environmental impact of an aquaculture operation, from start-up to decommissioning, does not exceed the ecological carrying capacity of its location.
5. Protect aquaculture from adverse environmental impacts from other human activities.



## Roundtable Final Report



6. Employ a project life cycle approach to address all phases of an aquaculture operation from site selection to decommissioning and site recovery.
7. Prevent or minimize negative impacts on other marine resource industries and users.
8. Deliver net benefits, which can include environmental, economic or social benefits to Nova Scotia.
9. Provide for transparency throughout the regulatory cycle.
10. Establish clear roles, responsibilities and accountability.
11. Numerical requirements included in indicators, standards and thresholds should have clear justification.
12. Ensure that regulations are achievable, contain incentives for compliance and can be enforced.



### Guiding Principles with Qualified Support

The following guiding principles received either (1) outright support from some Roundtable members, (2) qualified support from others as indicated by a 'maybe' vote, usually predicated on needing more information or further discussion, or (3) an abstaining vote:



13. Deliver net benefits, which can include environmental, economic or social benefits to host communities where aquaculture operations are located.
14. Include public input and local knowledge throughout the regulatory process.
15. Address issues of regulatory equity between aquaculture and other industries.
16. Avoid undue regulatory burden on smaller operations while staying within the limits of environmental carrying capacity.
17. Improve regulatory certainty.



### Guiding Principles with Partial Support

The following guidelines received outright or conditional support from host Roundtable members but also at least one 'no' vote.





## Roundtable Final Report

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18. Develop site selection process and criteria □
19. Encourage operations with good compliance records to grow their operations in Nova Scotia □
20. Encourage innovation through the use of performance-based regulations □ where appropriate □
21. Use total cost accounting to ensure ecological services are valued □

□

□



## Roundtable Final Report

### Recommendations

The Roundtable developed along its first potential recommendations in two ways. Individual members were asked to submit written ideas for possible recommendations, and approximately half the members provided material. The Roundtable also conducted small and large group discussions that resulted in lists of possible recommendations. All of the recommendations in the long list appear in this report.

□

As with the Guiding Principles, Roundtable members were asked to vote 'yes', 'no' or 'maybe'. However, with a total of 66 potential recommendations to discuss, it proved impossible within the Roundtable's time limitations to conclusively determine the exact level of support for each recommendation. Especially as many members were not able to attend all the meetings. In the following list, the degree of support is indicated after each recommendation. If a recommendation received a 'no' vote from a majority of the members present, it still included in the list but does not receive a number.

□

While there was sufficient time to enable a definitive accounting of exactly where each Roundtable member stood on each issue (an iterative process only partially completed), it is important to note that each recommendation was discussed quite thoroughly and that the panel members were present for these discussions.

□

A note about the wording of the recommendations: in most cases the wording indicates that the responsible body 'should' carry out a certain action. The Roundtable members discussed this wording with some members expressing concern that it allowed too much discretion on the part of the regulatory body. The use of 'should' has been maintained mainly because the Roundtable was not engaged in drafting actual wording for regulations. However, the reader should be aware that the intent of 'should' is that the specified measure will be implemented and not left to the uncertainty of ministerial discretion.

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## Roundtable Final Report

### □ 1. Roles and Responsibilities

#### 1.1 Division of Government Responsibility □

The Province should continue discussions with the Government of Canada to clearly delineate areas of responsibility for the planning, regulation and management of aquaculture. □

□

##### Qualified Support □

The main questions discussed in the types of discussions presently ongoing and therefore the precise meaning of “continue discussions” □

□

#### 1.2 Conflict of Interest Regulation and Promotion □

The regulatory framework should ensure that responsibility and accountability for the regulation of aquaculture is clearly separated from the function of industry promotion and marketing to prevent actual or perceived conflict of interest. This may be accomplished by moving regulatory responsibility to a different department or by other means to be determined by the Panel. □

□

##### Partial Support □

□

#### 1.2 Define Roles and Responsibilities □

The regulatory framework should define the roles and responsibilities for the Province, Federal government, First Nations, the aquaculture industry, communities and other parties directly impacted. □

□

##### Qualified Support □

There was support from nearly all Roundtable members for this recommendation. □

□

#### 1.3 Federal Responsibility for Aquaculture Leases □

Responsibility for issuing aquaculture leases in tidal waters should return to the Federal government. □

□

##### Not Supported □



## Roundtable Final Report

□

This recommendation received more No Votes than the Yes and □  
'maybe' Votes combined □

□

□



## Roundtable Final Report



### 2. Coastal Planning for Aquaculture

#### 2.1 Coastal planning process

The Province together with federal partners should, within a reasonable period of time, develop an overall coastal planning process to address the location of aquaculture operations in the context of environmental suitability and other marine resource uses.



##### Partial support

This recommendation was vigorously discussed and only receives this rating if partial support by the narrowest of margins. The main objections to the concept of coastal planning were rooted in Roundtable members' experiences with other planning processes. Specifically the ESSIM offshore planning process. The concerns expressed were that such multi-stakeholder processes take a huge amount of time from participants that may not produce useful results and may delay other more effective actions.



The advantages of using a coastal planning approach was identified by its supporters, included a more proactive way to ensure appropriate aquaculture siting with community involvement, and a better way to avoid conflicts with other marine resource users.



#### 2.2 Other regulatory reform not dependant on coastal planning

Improvements to the aquaculture regulatory system should proceed in a timely fashion, independent of progress made with developing a coastal planning framework.



##### Qualified support

This recommendation was added to address one of the concerns raised by those opposed to coastal planning.



#### 2.3 Zoning

Identify areas most suitable for the establishment of aquaculture, and determine those areas where open shell farming should not take place.





## Roundtable Final Report

place based on environmental sensitivity, the need to protect wild Atlantic salmon from potential impact to other marine resources.

### Partial Support

The main objections raised by the zoning approach were based on the argument that every potential aquaculture site is different, that site identification must be carried out by the aquaculture operator, and that the current site approval process is sufficiently rigorous. Subsequently, the discussion of this recommendation the representative from IANS requested that the potential impacts to tourism should receive particular attention (see individual statements Appendix A).



### 2.4 Coastal planning in the Bras d'Or Lakes

The Bras d'Or Lakes would be a suitable location for a pilot coastal planning project in consultation with First Nations. The existing Bras d'Or Lakes Collaborative Environmental Planning Initiative (CEPI) could provide valuable information and input to this process.



### Partial Support

The Roundtable heard that related initiatives have been effective in the Bras d'Or area.



### 2.5 Collate existing spatial information

The Province should collate existing coastal planning information and make it publicly available to assist with decision-making regarding aquaculture siting.



### Partial Support

This recommendation was put forward as an alternative to a more comprehensive coastal planning approach. In discussion it was suggested that much of this information already exists and questions were raised about the feasibility of keeping publicly available inventories up to date.





## Roundtable Final Report

### 3. Public Engagement

#### 3.1 Early Notice and Public Input Requirement

There should be a regulatory requirement to notify the public early and to incorporate local knowledge and public input into license applications.

□

##### Qualified Support

There was general agreement that early public input was vital. The main concern raised was how early public notification should be required and how the interests of a prospective aquaculture operator could be protected at this stage. The issue of potential claim jumping was raised, but it was indicated that this could be prevented by formal expression of interest.

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#### 3.2 Public Hearing

A public hearing should be a mandatory requirement with formal procedures.

□

##### Partial Support

Several people cited past experience with public meetings that were poorly run without formal procedures. Questions were also raised as to whether, if a proponent had carried out effective consultation, a public hearing would always be necessary.

□

#### 3.3 Transparency

All license application information pertaining to environmental impact and impacts on other marine resource use and users should be made publicly available.

□

##### Qualified Support

While the principle of transparency was supported, there were questions about the protection of sensitive business information.

□

#### 3.4 Government Response



## Roundtable Final Report



Government should be required to respond to the issues raised during the public hearing process.



### Qualified Support

The concern behind this recommendation is that currently when stakeholders raise environmental issues during the application process, there is usually no response forthcoming.



### 3.5 Assignment of lease

If a site lease is transferred between operators or there is a change in species grown and there may be a substantial change in environmental impact, a review of the license or permit should be carried out including public input. There should also be a public comment period at the time of licence renewal.



### Partial Support





## Roundtable Final Report

### □ 4. First Nations

#### 4.1 Meaningful Consultation □

Both the Province and the proponent should carry out meaningful consultation with KMK, other First Nations umbrella groups, First Nations leaseholders and with First Nation communities near the proposed site to ensure a solid understanding of the proposed aquaculture venture and address community concerns and rights issues. The consultation should follow KMK guidelines. □

□

#### Qualified Support □

The only qualifications raised were that some members were unfamiliar with KMK guidelines and felt they would need more information. □

□



## Roundtable Final Report

### □ 5. Environmental Impact Assessment

#### 5.1 Provincial Environmental Impact Assessment □

The Regulatory Framework should include a requirement for environmental impact assessment to be carried out by the Province as part of the licensing process, including consideration of environmental, economic and social issues. □

□

##### Qualified Support □

While there was support for the Province to pick up the responsibility for environmental impact assessment for aquaculture, there were also concerns raised that it should not become an onerous process especially for shellfish operations, and that it should be compatible with the other Roundtable recommendations. □

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#### 5.2 Required data □

Detailed habitat and water chemistry data for the proposed site must be provided as part of the EIA process and a reference site identified for comparison. The data should be applicable to the Environmental Monitoring Program process. □

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##### Unanimous Support □

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#### 5.3 Risk analysis □

The EIA process should include a risk analysis for all existing fisheries in the proposed site area, followed by a carrying capacity study. □

□

##### Partial Support □

Questions were raised about the amount of work involved in carrying out risk analysis and carrying capacity study for each application. It was pointed out that coastal planning process could also address these issues before the EIA process. □

□

#### 5.4 Third party EIA □

EIA reports should be prepared by an independent third party. □

□

##### Partial Support □



## Roundtable Final Report

### □ 6. Use of Science and Traditional Knowledge

#### 6.1 Science-based Regulation □

The development of regulations, indicators, standards and thresholds should be science-based and should be integrated with local ecological knowledge. □

□

##### Qualified Support □

□

#### 6.2 Complementary role of science and local knowledge □

Science-based evidence should use conventional natural science to investigate and validate local knowledge with the full participation of the local knowledge holders. □

□

##### Qualified Support □

A question was raised as to who would pay for this process. □

□

#### 6.3 Mi'kmaq knowledge studies □

Mi'kmaq traditional knowledge should be used throughout the regulatory process. Processes should be put in place to ensure that research issues are addressed through Mi'kmaq knowledge studies that include land and water resource use, cultural uses and tools to identify indicators. □

□

##### Qualified Support □

It was recognized that this is part of a larger process of rights and treaty obligations. □

□

#### 6.4 Status of traditional and local knowledge □

Traditional and local knowledge should be considered as evidence. □

□

##### Partial Support □

This recommendation is about giving weight to traditional and local knowledge in legal and administrative procedures rather than treating it □



## Roundtable Final Report

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as anecdotal. The main concern raised was that more information was needed.

□

### 6.5 Precautionary Approach

The Precautionary Approach should be employed when data is limited or absent.

□

#### Partial Support

Here was sufficient time to properly discuss the difference between the precautionary principle (see Guiding Principles) and the precautionary approach.

□

### 6.6 Research

To support evidence-based regulatory decision-making, continuing research should be supported both directly by the Province and industry, and through federal-provincial partnerships. This research should include, but not be limited to the following areas:

- impacts of aquaculture on fishers
- escaped salmonid impacts on wild stocks
- impacts of ISA on wild salmon stocks
- impacts of sea lice
- knowledge gaps identified by the Knowledge Roster.

□

#### Qualified Support

□

### 6.7 Research Questions

Develop a process to pose clear research questions to support sustainable management. Make questions available to guide research by students.

□

#### Partial Support

□

□



## Roundtable Final Report

### □ 7. Siting Process

#### 7.1 Siting Criteria □

The Regulatory Framework should establish siting criteria to include water depths, current flows, distances from wild fisheries and harvest areas for Irish moss, sea urchin, shellfish etc., distances from salmon rivers, migration paths, fishing grounds, other marine resource uses, natural conservation areas, and spacing of aquaculture sites.



#### Partial Support □

The views on whether siting criteria should be included in regulation ranged from a statement that this was a make-or-break issue and that the new framework must include numerical criteria to concerns that criteria could be too rigid and would not appropriately address the diversity of site conditions.



#### 7.2 First Nations Criteria □

First Nations food, social and ceremonial fisheries must be addressed through the siting criteria and throughout the siting process.



#### Unanimous Support □



#### 7.3 Carrying Capacity □

The Regulatory Framework should require the determination of the carrying capacity of a proposed site and a reference site, in order to maintain ecosystem conditions. Licensing should include maximum biomass levels based on carrying capacity.



#### Unanimous Support □



#### 7.4 Decision Support System □

Use the best available prediction model to assess site suitability.



#### Qualified Support □



## Roundtable Final Report

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The Roundtable discussed use of DFO's Decision Support System which addresses local and far-field effects □

□

### 7.5 Predicting levels of settled waste □

Use the best available prediction model to predict levels of settled organic wastes below fish cages, and address the cumulative effects of successive grow-out cycles of the lease term. □

□

#### Partial support □

Again, the Roundtable discussed the use of DEPOMOD as an appropriate tool and then broadened the recommendation to encompass the best available model. A concern was raised that this recommendation was in essence telling the scientists how to do their job □

□

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□



## Roundtable Final Report

### □ 8. Closed Containment

#### 8.1 □ Moratorium on open-pen □

The Province should not approve new open-pen fish operations until the new regulatory regime is in place.

□

##### Partial Support □

The main difference in opinion on this recommendation centred around the concept of ‘in place’, given that the development and approval of new regulations could take considerable time. The suggestion was made that the intent of proposed regulations could be implemented earlier through license terms and conditions.

□

#### 8.2 □ True cost evaluation □

The Province should commission a detailed comparison of the economic, social and environmental impacts of closed containment and open-pen fish farming to include true cost evaluation.

□

##### Partial Support □

The main objection raised to this recommendation was that some members did not believe that viable methodologies exist to carry out a true cost evaluation.

□

#### 8.3 □ Encourage closed containment □

The regulatory framework should encourage and facilitate the development of closed containment aquaculture operations to reduce waste, disease and parasite transfer to wild fish populations.

□

##### Partial Support □

□

#### 8.4 □ Closed containment requirements □

Closed containment operations should be required to treat all waste and water discharge to prevent negative impacts.

□

##### Partial Support □



## Roundtable Final Report

□

A criticism of this recommendation was that these requirements were already in place.

□

### 8.5 Phasing Out Open-pen Operations

No new open-pen operations should be approved, and all existing open-pen operations should be removed from coastal waters within five years.

□

Not Supported

This recommendation received more 'no' votes than 'yes' and 'maybe' votes combined.

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□

□



## Roundtable Final Report



### 9. Open-pen Practices

#### 9.1 Control of use of chemicals

The Regulatory Framework should ensure that the use of antibiotics, therapeuticants and anti-foulants are controlled to minimize ecosystem impacts and ensure that non-target species are not affected. The use of pesticides to treat sea lice should be prohibited.



##### Qualified Support

This recommendation very nearly received unanimous support.



#### 9.2 Containment management protocol

The Regulatory Framework should include a salmonid containment Management Code similar to the Maine Model which includes marking fish for site-specific identification. The Code should address the use of high-quality twine-resistant fibres to prevent escapes.



##### Partial Support

The primary concern expressed was a lack of information about containment codes and the Maine Model (a particular problem caused by the Roundtable's time constraints).



#### 9.3 Hallowing

Licensing requirements should establish the hallowing requirement based on the time needed for sediment, flora and fauna to recover to reference site levels and maintain toxic conditions. A threshold should be established. If the site takes longer than the threshold time to recover, the license should be cancelled.



##### Partial Support



#### 9.4 Feed waste and pieces

Advances in best practice regarding the control of feed waste and pieces should be built into the compliance and enforcement regulations.





## Roundtable Final Report

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### Unanimous Support □

□

#### 9.5 Disease □

The Province should develop an appropriate protocol to address all aspects of fish health and should ensure appropriate expertise is involved. Fish with reportable diseases should be removed from ocean pens as soon as possible. No grow-out should be permitted. Harvesting controls should be instituted until the site has been declared free from the specific pathogen. □

□

### Partial Support □

Roundtable members were divided by the inclusion of a requirement to remove all fish with reportable diseases, with a feeling that this was too broad a prescription. It was also stressed that this recommendation was made in the context of open-pen farming and would not be applicable to shellfish operations. □

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## Roundtable Final Report

### □ 10. Integration of Other Processes

#### 10.1 Certification □

Any fish operation in Nova Scotia should be required to meet the Aquaculture Stewardship Certification standards and conditions □

□

##### Partial Approval □

It was recognized that certification programs will likely play an increasingly important role in promulgating best management practices in the aquaculture industry. However there were questions about the value in incorporating such programs within the regulatory framework, and also about the selection of a particular certification scheme. The representative of Ecology Action that originally put forward this suggestion subsequently indicated that they wished to retract it because they believed there were more appropriate regulatory tools available □

□

#### 10.3 Insurance □

Publicly funded compensation for catastrophic losses related to disease should not be available except where the effect is industry-wide or the compensation is otherwise required under international agreements relating to reportable diseases. □

□

##### Qualified Approval □

Approval for this recommendation was almost unanimous □

□

#### 10.4 Code of Practice □

The regulatory framework should incorporate industry codes of practice □

□

##### Not Supported □

This recommendation received more 'no' votes than 'yes' and 'maybe' votes combined. While there is work ongoing on an industry code of practice for Nova Scotia, it was pointed out that the aquaculture industry worldwide is now placing more emphasis on external certification programs □

□



## Roundtable Final Report



### 11. Decommissioning

#### 11.1 Operator Responsibility

The Regulatory Framework should require operator responsibility for decommissioning and remediation standards for both on and off-lease clean-up, including shoreline remediation.



##### Unanimous Support



#### 11.2 Sampling

Bottom sampling at the time of decommissioning should be carried out, to be paid for by the operator.



##### Partial Support

The main criticism of this recommendation was that some members believe that this requirement is already in place.



#### 11.3 Bonds

The framework should require the operator to post a bond at the time the license is issued for over the cost of remediation.



##### Qualified Support

Questions were asked about the success of bonding arrangements and consideration of other types of financial assurances.



#### 11.4 Lease Tenure

The current system of lease tenure should be reviewed to ensure that decisions follow the maintenance of lease on an active site balance, the interests of the leaseholder, other aquaculture businesses that may wish to develop the site, the adjacent communities, and other marine resources and users.



##### Qualified Support

This recommendation almost received unanimous support.





## Roundtable Final Report

### □ 12. Monitoring and Enforcement

#### 12.1 □ Maintainoxic conditions

The current Environmental Quality Objective of the Environmental Monitoring Program to maintainoxic conditions should be enforced. Enforcement measures could include change in licence conditions, remediation or licence cancellation. The current NSDFA formula used to categorize the environmental status of a site should be changed to ensure that Oxic (Normal), Hypoxic (Polluted), and Anoxic (Grossly Polluted) conditions are fairly represented.



##### Qualified Support

A concern was raised that this recommendation was too prescriptive and that scientists should be left to make these determinations. The Roundtable also acknowledged the special situation in the Bras d'Or Lakes where this recommendation would not apply because the baseline conditions are notoxic.



#### 12.2 □ More environmental indicators

The regulatory framework should move away from a narrow focus on sulphides to include the use of more extensive lists of environmental indicators for monitoring. These may include metal contamination, bacterial layers, dissolved oxygen and biodiversity of sediment life. Far-field effects and biological recovery should also be addressed.



##### Partial Support

A criticism of this recommendation was again that it was too prescriptive and that the Roundtable should not be specifying indicators.



#### 12.3 □ Third party

Monitoring should be conducted by an independent third party.



##### Partial Support





## Roundtable Final Report



Roundtable members were divided or uncertain about this recommendation mainly because of uncertainty about what would constitute an independent third party and the practicality of this requirement. It was recognized however that building trust in monitoring results was an important goal.



### 12.4 Audit

Monitoring should be the responsibility of the operator or its consultant but audited on a regular basis by government.



Partial support



### 12.5 Community Observers

Community members should be encouraged to participate in monitoring as observers in field sampling in order to increase transparency and build trust.



Unanimous support



### 12.6 Responsibilities for monitoring and compliance

Establish a QMP/ HACCP compliance model that clearly establishes industry and government responsibilities for monitoring and compliance.



Qualified support

This recommendation was based on experience in maintaining food safety in the fishing industry. Roundtable members were interested in the concept but many needed additional information.



### 12.7 Make EMP data public

All Environmental Monitoring Program data should be made available on a website in a timely manner.



Qualified support





## Roundtable Final Report

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There was overall support for making FMP data available, with no question of how best to do this.

□

### 12.8 Enforcement and Penalties

Regulations and license requirements must be enforced. Penalties must be significant in fact as a deterrent. Ongoing lack of compliance should be associated with lease termination.

□

Unanimous Support

□

### 12.9 Annual Licensing

Licences should be authorized annually based on compliance.

□

Not Supported

This recommendation received more 'no' votes than 'yes' and 'maybe' votes combined.

□

### 12.10 Observer Program

Monitoring should include an observer program, similar to that used in the commercial fisheries.

□

Not Supported

This recommendation received more 'no' votes than 'yes' and 'maybe' votes combined. The approach suggested in Recommendation 12.5 was generally seen as more appropriate.

□

□



## Roundtable Final Report

### □ 13. Access to Justice

#### 13.1 □ No grandfathering □

Existing sites should not be grandfathered from the requirements of new regulations. □

□

Partial Support □

□

#### 13.2 □ Right of appeal □

The public and the potential operator should have the right of appeal a decision to issue or renew a license or refusal to issue a licence. □

□

Partial Support □

□

#### 13.3 □ Request for decommission □

The framework should include a procedure to enable a community applicant to request that the Minister require the decommissioning of a site demonstrating poor environmental performance, with the accompanying right of appeal. □

□

Partial Support □

□

#### 13.4 □ Legal assistance □

Legal assistance should be made available to community organizations and NGOs wishing to challenge decisions deemed not to be in the best interest of the public. □

□

Not Supported □

This recommendation received more 'no' votes than 'yes' and 'maybe' votes combined. □

□



## Roundtable Final Report



### 14. Regulatory Review and Improvement

#### 14.1 Five-year review

The new regulatory framework should include a five-year review by a committee including government, First Nations and stakeholders.



##### Qualified approval

A concern was raised about the specification of a review committee.



#### 14.2 Continuous improvement

The regulatory framework should include a process to drive to ensure continuous improvement, rather than waiting for a five-year review.



##### Unanimous approval





## Roundtable Final Report

### Appendix A

#### INDIVIDUAL STATEMENTS BY ROUNDTABLE MEMBERS

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Members of the Roundtable were invited to submit a final 300-word individual statement at the end of the process. The following members accepted this invitation and their statements follow:

- Brian Blanchard (Joint statement with Robin Stuart on behalf of the Nova Scotia Aquaculture Association (NSAA))
- Lisa Dahr (on behalf of the Tourism Industry Association of Nova Scotia (TIANS))
- Susanna Fuller (on behalf of Ecology Action Centre (EAC))
- Lewis Hinks (on behalf of the Atlantic Salmon Federation (ASF))
- Murray Hill (on behalf of the Atlantic Canada Fish Farmers Association (ACFFA))
- Carl Purcell (on behalf of the Nova Scotia Salmon Association (NSSA))
- Bob Rutherford
- Ruth Smith (on behalf of the Friends of Port Mouton Bay)
- Robin Stuart (Joint statement with Brian Blanchard on behalf of the Nova Scotia Aquaculture Association (NSAA))
- Karen Traversy (on behalf of the Coastal Coalition of Nova Scotia)
- Bill Williams (on behalf of the Association for the Preservation of the Eastern Shore (APES))

□



## Roundtable Final Report



### AANS Statement



## SIX CLOSING POINTS

Submitted by Brian Blanchard and Robin Stuart

On behalf of the AANS Board of Directors and members, we submit six closing points through the lens of the Ivany Report. That report identified 12 Game Changers to ensure the future prosperity of NS and its communities.

1. Progress can be derailed if it is politics as usual. A strong framework and science-based decision making can ensure that decisions are based on the longer-term prosperity of NS rather than the impact of political pressures. A focus on salmon or the goal of eliminating marine salmon farming can't be done based on the science available. The framework needs to recognize existing best practice, the industry's R&D focus, and the net benefit to communities to ensure that decisions reflect the overall economic and social contribution of sea farming. Decisions based on the strength of one or a few voices is politics as usual.

2. According to Ivany, to grow the economy we need more enterprises and more business success. Aquaculture is the fastest growing food sector in the world. With a solid framework and a suite of programs to facilitate entrepreneur success, the sector can offer opportunities in a diversified economy. The R&D capacity exists to support responsible growth and innovation and leverage support from the elements of a provincial growth strategy for targeted development. The market for aquaculture and sector innovation exists globally.

3. Sea farmers have been farming sustainably in NS for close to 40 years. Shellfish farming can be a net contributor to ecosystem health but is often overlooked by conversations about salmon. That benefit of shellfish farming needs to be recognized in regulations. The AANS welcomes regulatory excellence to provide a higher level of assurance. In our codes of work, we have begun the dialogue with leaders about the twin necessities identified in the Ivany Report – 1. economic growth and 2. sustainability and risk management. The AANS can demonstrate its compliance with the highest standards, its promotion of R&D, and its capacity building initiatives to exceed regulations and support farmers on the path to certification. This will provide a greater level of assurance to local and global stakeholders and support access to the growing export market for NS exports.





## Roundtable Final Report

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4. NS's aquaculture sector and its technologies represent a valuable export market. The opportunities to meet the growing demand for food can't be met by fisheries alone or by closed containment production. Without development in NS, other jurisdictions, some less focused on best practice, will usurp opportunities. Future regulations and programs can support responsible growth to meet NS's the export potential. The case can be made that supporting the export-capacity of aquaculture SMEs can benefit NS's rural and urban communities.

5. Aquaculture offers jobs and can play a role in turning back the trend of declining populations. A framework that supports responsible growth and business success builds opportunities for related careers and expands the sector's focus on R&D. NS's universities and ocean science institutes have the talent to support NS as a leader in aquaculture, accessing the immense institutional capacities referred to in the Ivany Report.

6. NS needs entrepreneurs. Programs that support innovation, a facilitative business environment, and regulations that do not impose restrictive entry barriers can attract entrepreneurs as farmers or in supplier industries. A focus on sector growth is the best approach to develop what the Ivany Report refers to as "ecosystems" where local conditions and assets are leveraged. Pristine waters and the sector's expertise can be leveraged to ensure responsible development. According to the Ivany Report: "Legal, bureaucratic and regulatory systems should be reformed to remove impediments to, and enhance incentives for business success".

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## Roundtable Final Report

### TIANS Statement

#### TOURISM MATTERS

□

TIANS believes that a regulatory framework for aquaculture must include consideration for the impact on the tourism industry.

In 2013, 2 million visitors generated \$2.1 billion in tourism spending in Nova Scotia. Tourism revenue supports over 40,000 jobs (Stats Canada) and generates over \$250 million in tax revenues. Almost half of the \$2.1 billion was generated in communities outside HRM. The industry is comprised of hundreds of small businesses in the five sectors of tourism. Nova Scotia's brand is intricately linked to the sea and the coastal experiences offered in the many small communities are crucial to Nova Scotia being a destination of choice.

Tourism is Nova Scotia's largest service export. The recent recognition of tourism in the many Report highlights not only the current economic impact but the tremendous potential that exists for economic growth over the next decade.

The Draft Recommendations reference zoning as a criteria for consideration but there is no specific reference to tourism in the criteria. To imply that "other marine uses" includes tourism diminishes the significant economic value of the industry. Recreational tourism is one of the fastest growing sectors of tourism and depends on a healthy and accessible coast.

As well as recognizing tourism as a key consideration, TIANS believes that:

- closed containment in fish and small scale shellfish operations provide the most responsible practices for development in Nova Scotia. A future focus on these types of operations would be more sustainable for the province over the long haul and limit impact on other industries.
- taxpayer funded government insurance programs for the aquaculture industry need to be reviewed.

#### Closing Statement

The regulatory framework for Nova Scotia should encourage sustainable economic development that respects the significant and growing contribution of Nova Scotia's tourism industry and other resource-based industries.



## Roundtable Final Report

### Ecology Action Centre Statement to Roundtable Report

The Ecology Action Centre is pleased to have been a part of the Panel and the Roundtable for the Doelle-Lahey Review of the Nova Scotia Aquaculture Regulation. We sincerely hope that the results of the process are used proactively to ensure that impacts of open net pen aquaculture are acknowledged and mitigated and that transition to closed containment systems is made a priority. We support aquaculture that:

- Does not degrade the ecosystems in which it is located or upon which it is dependent.
- Does not harm wild fish populations or traditional coastal industries.
- Is in harmony with the economic, social and cultural activities that use the same resources and that access to information and participation in decision-making is fair and equitable.
- Ensures that costs are not externalized to the environment, other sectors or individuals and are reflected in the cost of production.
- Does not diminish the ability of future generations to use the same natural resources.

### □

We specifically encourage the fish farming industry to:

- Use closed containment technology that eliminates the risks of disease and parasite transfer from wild fish as well as escapes of farmed fish to the wild;
- Guarantee untreated waste is not released into the ocean;
- Label fish indicating farmed and method of farming so consumers can make informed choices;
- Develop feed for farmed salmon that does not deplete fish stocks around the world;
- Ensure wildlife is not farmed as a result of fish farming;
- Prohibit the use of genetically modified fish;
- Eliminate the use of chemicals, antibiotics and pesticides in fish farming;
- Ensure contaminants in farmed fish don't exceed levels deemed safe by international standards; and
- Stop locating fish farms in areas opposed by local communities.



## Roundtable Final Report

### □ Individual Statement – Murray Hill, ACFFA NS Regional Manager

On behalf of the Atlantic Canada Fish Farmers Association, I was pleased to participate in this Aquaculture Regulatory Review Roundtable which allowed an incredibly varied group of community members to have a full and open discussion about Nova Scotia's aquaculture industry and the regulatory framework that should oversee it.

I welcomed the opportunity to participate in a process that attempted to separate aquaculture fact from fiction. I saw the active engagement of community members and encouraged the building of relationships between varied interests.

With its vast aquatic resources, technology innovation and technical expertise, Nova Scotia is poised to become a leader in the globally competitive, sustainable aquaculture industry. This home-grown opportunity to create jobs for Nova Scotians. This roundtable process was a chance to build consensus to support the development of Nova Scotia's aquaculture industry. However, in order to seize that potential, Nova Scotia needs an efficient, predictable and accountable regulatory process. A regulatory framework should serve as the basis for public confidence that Nova Scotia's aquaculture industry is responsible and accountable. Regulation must be evidence-based. Creating an environment of regulation by referendum would do a disservice to an industry that has operated responsibly and in an environmentally sustainable manner for over three decades and to the regulators and policy makers. Nova Scotians deserve to have a secure access to locally grown fresh, healthy and nutritious quality seafood that comes from our marine farmers. Finally, we need to recognize that aquaculture farming is Nova Scotia's fish and shellfish farmers should have access to similar programs as their land-based counterparts. We urge this panel to recommend that the province designate salmon farmers as farmers under the law because that's what they truly are.



## Roundtable Final Report

### Statement by Lewis Hinks, Atlantic Salmon Federation

A major threat to wild Atlantic Salmon and their environment is open-pen salmon farming and related issues which the Atlantic Salmon Federation (ASF) devotes significant resources to. Time and energy. Large-scale escapes are frequent occurrences in open-pen fish farming and can happen through routine handling or large-scale episodic events such as storms. There is potential for escapees to enter rivers and breed with wild salmon causing reduced genetic diversity and fitness in wild populations. In addition, wild salmon are then faced with a new competitor for freshwater resources. The prevalence of disease and parasites increases with the high density of fish in pens that common farmed salmon aquaculture and spreads to wild fish, subsequently threatening the persistence of wild populations. Fish in open-pen salmon aquaculture can contract diseases from wild fish. However, farmed fish in cage operations can magnify the infection within and between cage sites, thus contributing to the spread, intensity and maintenance of these diseases in wild populations. There are numerous peer-reviewed scientific studies that highlight the negative impacts of open-pen aquaculture on the environment in general and the wild fish populations. ASF believes that the ultimate solution to the problems posed by open-pen salmon aquaculture is closed containment, preferably land-based. This is the only method that we see that fully protects wild Atlantic Salmon from the negative impacts posed by this industry. Of course, it should be an alternate method of raising salmon that addresses our concerns identified above. Then we would be compelled to study such a proposal in the short-term. Continue the moratorium on expansion to allow time to develop a regulatory regime that is based on best practices currently undertaken in Maine and Norway and that includes a system of enforcement and repercussions for violations (fines and license suspension).



## Roundtable Final Report

### Comments on Round Table from Carl Purcell, Nova Scotia Salmon Association

The Nova Scotia Salmon Association was happy to be asked and agreed to be represented on the Round Table for Aquaculture Regulations for Nova Scotia.

Based on past experience NSSA had two main objectives:

1. To assist in drawing attention to land based closed containment as a legitimate form of fish aquaculture
2. To draw attention to the present method of marine open pen aquaculture and its negative impact on the marine environment and to explore positive changes.

During the six months twelve sessions it became apparent that land based closed containment was not going to get a proper hearing and there was never a true accounting comparing both methods of fish aquaculture.

One of the main regulations that need change under the present method of marine open pen fish aquaculture was the area of site selection and the criteria used for this process. These topics received cursory discussion and when voting took place it was evident that not all Roundtable members wanted to have concentrated debate to improve the industry.

Based on the two objectives outlined by NSSA it would be appropriate to say that only partial success was achieved.

The Roundtable facilitator did an excellent job trying to keep the Roundtable members on task and trying to get a good debate on various topics. There was often reluctance by members to move forward to produce a change.

Nova Scotia Salmon Association wishes to thank the provincial government for committing to an aquaculture panel, a roundtable science committee and community meetings in order to implement new regulations for aquaculture in Nova Scotia.

Carl Purcell representing NSSA



## Roundtable Final Report



### Aquaculture Round Table comments by Bob Rutherford

Aquaculture development needs to be taken in a planned way. In the absence of overall coastal planning which would benefit all users and economic development, aquaculture should have a shellfish plan and a finfish plan. Each plan would have its own screening criteria developed through transparent discussion with the affected coastal communities and could be funded jointly but the levels of government and industry. These plans would identify areas suitable for the specific aquaculture type. See this as the only way the industry can move forward and each its potential without continued opposition.

Since not all the parties involved want to move in this direction there needs to be a Provincial level Environmental Assessment of the projects brought forward by the industry. Clear environmental criteria must be set for aquaculture site assessment and monitoring. The assessments and monitoring requests by DFO science and habitat managers must be followed. They must be considered requirements not recommendations and these requirements must be reflected in the lease/licence for the site.

Assessments and monitoring must include the aspects outlined in DFO documents such as:

- Assessment of finfish cage aquaculture in the marine [http://www.dfo-mpo.gc.ca/csas/Csas/status/2005/SAR-AS2005\\_034\\_E.pdf](http://www.dfo-mpo.gc.ca/csas/Csas/status/2005/SAR-AS2005_034_E.pdf)
- DFO Marine Fish Habitat Information Requirements for finfish aquaculture projects [http://www-heb.pac.dfo-mpo.gc.ca/publications/pdf/finfish\\_mfeap.pdf](http://www-heb.pac.dfo-mpo.gc.ca/publications/pdf/finfish_mfeap.pdf)
- A GUIDE TO THE DECISION SUPPORT SYSTEM FOR ENVIRONMENTAL ASSESSMENT OF MARINE FINFISH AQUACULTURE <http://www.dfo-mpo.gc.ca/Library/269146.pdf>
- and similar shellfish documents

It was unfortunate that the round table lumped shellfish and open pen finfish aquaculture together and made the voting on recommendations difficult. This combined with the confusion over legal regulations and regulation is an overall management framework also restricted progress.

This was a very interesting process and looks forward to seeing the panel's report.





## Roundtable Final Report



Individual Statement by Ruth E. Smith, Friends of Port Mouton Bay

A world-class regulatory framework to support sustainability of aquaculture for betterment of coastal communities and the Province as a whole would include:

Net Benefits Environmental, Economic, Social Benefits to Host Communities where aquaculture operations are located

An Siting Suitability Process which sequentially involves:

- Early Public Notice to solicit public input to existing marine uses (Maine Precedent)
- Site Screening Model to proactively decrease environmental risk (e.g. MFADSS model, Hargrave, 2002)
- Determination of site carrying capacity (e.g. DEPOMOD model) during lease term as condition of lease



Precautionary Principle used when data are limited or absent.



Exclusion Zones:

In absence of Coastal Zone Planning, establish distances from areas of spawning, moulting, nursery, migration and harvest of commercial species; distances from shorelines of natural conservation areas (Nature Reserves, National Provincial Parks). (Exclusion Zone precedents in Chile, Scotland, Norway, New Brunswick.)



Local Ecological Knowledge:

- Science-based information for decision-making integrated with local ecological knowledge
- Traditional and Local Knowledge considered as evidence



No Grandfathering of existing sites from requirements of new regulations



Right for Public and Potential Operator to Appeal a decision to issue, renew or refuse a license.



Environmental Monitoring Program (EMP)

- Current Environmental Quality Objective of the EMP to maintain toxic conditions be enforced. Current narrow focus on sulphides as an





## Roundtable Final Report

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indicator expanded to include metals, bacterial layers, dissolved oxygen, □ biodiversity, sediment life (Precedent in Maine, Scotland, Denmark) □ Current methodology problems with sulphide analyses recognized by □ DFO and NSDFA in force need for other suitable indicators □

- Far-field effects □ address impacts on commercial harvests, eelgrass and □ kelp beds and wastes on shorelines □
- Community members encouraged as observers in field sampling to □ increase transparency and build trust □

□

Closed containment encouraged to contain waste, prevent disease and parasite □ transfer to wild fish □

□



## Roundtable Final Report

Karen Traversy, Clam Bay, Coastal Coalition of Nova Scotia

The Stakeholder Roundtable process was designed to provide a constructive conversation of issues to be addressed in a modernized regulatory framework for the NS aquaculture industry. A full range of issues of importance to coastal communities was discussed and resulted in some substantive recommendations to the Panel.

Key among these issues are early public notice of aquaculture lease/ licence applications, and the need for public input early in the regulatory process, including a mandatory requirement for a public hearing convened by government. Transparency is required at all stages of the regulatory process including licence/ lease applications, environmental impact assessment and other impacts on marine resource users (commercial fisheries, wild species and their habitats). During the life of the lease, operational information from a strengthened Environmental Monitoring Program is needed to restore public trust in the regulation of this industry.

Coupled with more pro-active planning by government in designating areas suitable for aquaculture, including carrying capacity studies and stricter siting criteria for farms, early notices, public hearings, strengthened monitoring and transparency throughout the process would go a long way to addressing stated community concerns and a growing lack of social licence for the expansion of the industry. The open-pen fish component in particular.

As the Roundtable recommendations show, however, this process had its limitations in providing clear advice to the Panel charged with advising the government. The lack of access to the government's study of the feasibility of closed containment aquaculture announced with the May 2012 launch of the Aquaculture Strategy constrained Roundtable discussion of this emerging component of the industry.

It is hoped that the considerable work undertaken by Roundtable members will contribute to a sustainable aquaculture sector for the province one that is acceptable and supported by the coastal communities which it is undertaken.



## Roundtable Final Report

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Bill Williams, APES

Final Statement □

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In writing this final summary as a member of the Aquaculture Review Board roundtable I am not sure if I should be happy or sad. I feel happy that we were able to accomplish so much over a short period of actual working time □

□

I am sure it must have become apparent to all at the table that those involved with the industry feel that the status quo is fine and they are doing nothing wrong □

□

In my tenure as an opponent to open pen farming I have found that those who constantly stray from the truth have an absolute fear of those who speak up □

□

As you now move to the next stage of the process, I ask only one thing: Listen to what people in the coastal communities have told you. These folks are not a group of free hugging, fear mongering fanatics as some staff members at NSDFA have at one time or another branded them. They are real, genuine caring people. There is nothing wrong with expressing your fear of what is being hidden from you □

□

I have been adamant throughout the process that with sensible, easy to interpret site selection criteria at least one third of the issues the industry is having difficulty with can be avoided. This criteria, if enacted without numerical distance references, water flow rates and water depth minimums, is useless and a waste. □

□

Two sad points of the process that stand out were the comment Bruce Hancock made at the end of his address to the roundtable. His warning that we had better be careful with what we put forward at the end of the day only one company will be farming in fish in this province. Mr. Hancock knows already that the probability of what will happen. The big fish always feeds on the small fish. When you control the feed industry you have the power to rule □

□

The other sad point was the fact that we were not able to get access to the Gardner Pinfold report. A number of reasons were given as to why we put little faith in these reasons □

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## Roundtable Final Report

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□ In closing, I want you to know how much the opportunity to be part of this process meant to me. Little did I know when I attended a meeting in Sheet Harbour in Feb 2012 that my concerns for the effects of open pen farms on migratory waterfowl would bring me down this road. □

□

If possible, I would like a copy of the draft report the panel sends to government. How we get to the final regulations is very important to me. □

□

There are people from the aquaculture industry worldwide watching the outcome of this review process. Do your best to make us proud of what we as a roundtable have given you to work forward with. □

□

My sincere thanks. □

□

Bill Williams □

Vice President □

APES □



## Roundtable Final Report

### Appendix B

#### Members of the Roundtable

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Brian Blanchard, Aquaculture Association of Nova Scotia □  
Brian Blanchard is Vice President and General Manager of Scotian Halibut Ltd. He is a graduate of St FXU with a B.Sc. in Biology, earned a Graduate Diploma of Aquaculture Technology from the Marine Institute of Newfoundland and Labrador and an M.Sc. in Aquaculture Management from the University of Hull, Humberside International Fishery Institute, England. His experience ranges from salmon farming in BC in the late eighties to farming in Newfoundland in the early 1990's which branched into working with fishermen throughout rural Newfoundland during the Cod Moratorium and he was the first finfish Technical Officer for NRC's Institute for Marine Bioscience working with the Aquaculture Research Team. Brian has worked with Scotian Halibut since 2000 and continues to provide global aquaculture consulting services in countries such as Norway, Panama, Chile, Saudi Arabia, Ireland, Spain, the United States and Canada. He currently teaches the Masters in Marine Management Studies at Memorial University and has taught in the BSC in Aquaculture program at Dalhousie University. His areas of expertise include hatchery and grow-out facilities design for both cage farming and land-based recirculation, overall marine management and operational design, marine finfish production, larval nutrition and international development. □

□

Lisa Dahr, Tourism Industry Association of Nova Scotia (TIANS) □  
Lisa is the Manager of Industry Relations and Professional Development with the Nova Scotia Tourism Human Resource Council, a division of TIANS. She works with industry to champion policy issues affecting tourism businesses and also helps operators develop strategic plans bridging existing human resource skill and productivity gaps. She is nationally certified trainer and is also the Master Trainer for World Host and the Service Excellence Programs in Atlantic Canada. Lisa holds a degree in Atlantic Canadian Studies from Saint Mary's University and prior to joining TIANS in 1995 she worked in Visitor Services for the Province of Nova Scotia as well as the United States. □

□

Susanna Huller, Ecology Action Centre □



## Roundtable Final Report

Susanna currently works as the Marine Conservation Coordinator at the Ecology Action Centre where her primary interests lie in moving towards sustainable fisheries that support coastal communities as well as a healthy, restored marine ecosystem. She has also been involved in community-based planning in the North End through Imagine Bloomfield, and advocating for province-wide networks of bicycle routes as a means of achieving health, environmental and economic goals particularly in rural areas. She has a PhD from Dalhousie in Marine Biology and a BSc from McGill University.

□

Murray Hill, Atlantic Canada Fish Farmers Association

Murray was educated at St. FX and Dalhousie, and retired from a 37 year long career with the federal and provincial governments working at provincial, national and international levels on a variety of fishery files (including fish farming, sport fishing, aquatic invasive species, and introductions and transfers). He has extensive volunteer experience in community economic development, health care, governance and employee attraction and retention issues at the community level. His consulting company is contracted by the Atlantic Canada Fish Farmers Association to provide regional management services in Nova Scotia.

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Lewis Hanks, Atlantic Salmon Federation

Lewis is Director of Nova Scotia Programs for the Atlantic Salmon Federation. A graduate of Dalhousie University, Lewis has been working to conserve fish populations for more than 25 years. He ran the Nova Scotia Adopt-a-Stream program for the first two years the program existed and helped prepare the first Adopt-a-Stream manual. He was the project biologist for the Cumberland County River Enhancement Association working on river restoration and enhancement projects in Cumberland and Colchester Counties. With the Atlantic Salmon federation, he has been directly involved in initiating the West River mining project to counter the impacts of acid rain, a first of its kind in North America. Early in his career he was involved in several aquaculture operations in both Nova Scotia and Ontario.

□

Ann MacLean, member-at-large

Ann has served as a municipal official for 3 years. She is the former Mayor of the Town of New Glasgow, former President of the Union of Nova Scotia Municipalities, former President of the Federation of Canadian Municipalities (FCM) and former President of the Nova Scotia Police Boards. Ann MacLean also



## Roundtable Final Report

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retired in 2004 as Vice President of Community Health for the Pictou County Health Authority □

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Allison McIsaac, Eskasoni Fish and Wildlife Commission □

Allison earned her Bachelor of Science from Mount Allison University and then obtained an Advanced Diploma in Aquaculture from the Fisheries and Marine Institute, MUN. She started working in aquaculture research and development at the Eskasoni Fish and Wildlife Commission (EFWC) in 1996 focusing on oyster culture. Presently, she is coordinating the hatchery efforts and working to develop First Nations capacity in aquaculture environmental monitoring within EFWC □

□

Bruce Morrison, Union of Nova Scotia Municipalities □

Bruce retired from the Province of NS having environmental and public health background. He retired in 2010 as Manager of Public Health Services for the Cape Breton District Health Authority and also spent a number of years as a Manager of Food Safety with the NS Dept. of Agriculture. Bruce has been a municipal representative in Victoria County Council since 1997 and the Warden of Victoria County since 2008. He has participated in and chaired numerous municipal, regional and provincial committees. He is currently a member of the Board of Directors of the Union of Nova Scotia Municipalities as a Regional Caucus representative. He is a life long resident of Baddeck and has a keen interest in the fishing industry because it is one of the two largest industries in Victoria County □

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Denny Morrow, Fishing Industry Consultant □

Denny retired in 2012 after 16 years as Executive Director of Nova Scotia Fish Packers Association. He served as industry co-chair of advisory committees with the Canadian Food Inspection Agency and the NS Department of Fisheries and Aquaculture and was a funding director of the Lobster Council of Canada. He is currently chairperson of Norigs (Georges Bank Moratorium Coalition) and doing consulting for the fishing and seafood processing industries □

□

Roderick Murphy, Union of Nova Scotia Municipalities □

The Union of Nova Scotia Municipalities (UNSM) is a not-for-profit organization mandated to represent the provincial interests of municipal governments across



## Roundtable Final Report

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Nova Scotia Total membership is 207 elected officials representing all 44 municipalities □

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Eugene O'Leary, Guysborough County Inshore Fishermen's Association □

Eugene is from Inshore Small Boat Sherman from Whitehead, Guysborough County □

He took over his father's Lobster License in 1989 and has been fishing ever since. He has always been very active in the politics of the fishery and has represented □

Guysborough County Inshore Fishermen's Association (GCIFA) in many □

committees such as Atlantic Fisheries Industrial Alliance, Eastern Scotian Shelf □

Integrated Management Board, The Temporary Fleet for Area 4 Snow Crab, The □

Nova Scotia Fisheries Sector Council and FA 1A. He is currently president □

GCIFA, Eastern Fishermen's Federation and Nova Scotia New Brunswick Eco □

Certification Society and Vice President of the Lobster Council of Canada and the □

Fishermen Scientist Research Society. Every now and then he does actually get up □  
go fishing ▀▀▀

□

Chief Terrance Paul, Union of Nova Scotia Indians □

Chief Terrance Paul started his career with the Boston Indian Council. After □  
returning home to Membertou, he joined the Membertou Band Council in the role □  
of Economic Development Officer and progressed in the position of Band Manager □  
before he was elected as Chief in 1984. Over the past 9 years, Chief Paul has □  
guided his community and administration to one of the most progressive □  
aboriginal communities in Canada. He has achieved many notable □

accomplishments in his current role including doubling the land base for □

Membertou and increasing the employment rate within Membertou to nearly 80% □  
in the community. Chief Paul is the Co-chair of the Assembly of Nova Scotia □

Mi'kmaq Chiefs, he is the Chair of the First Nation's Finance Authority, and he is an □  
active board member of the National Aboriginal Economic Development Board. An □

Honorary Doctor of Laws degree recipient for his determination to transform □

Membertou. Chief Paul is an unyielding advocate for the recognition of Mi'kmaw □

aboriginal and treaty rights. The Membertou go to 'Welcoming the World' □

undoubtedly the most accurate representation of the open and progressive □

aboriginal community that Membertou has become under the leadership of Chief □

Terrance Paul. □

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## Roundtable Final Report



Carl Purcell, Nova Scotia Salmon Association

Carl Purcell is a retired educator, administrator and teacher of science and physical education. Carl has held the office of President of the Nova Scotia Salmon Association on three separate occasions over the past 16 years. He has been the recipient of several awards for recognition of his commitment to the conservation and protection of wild Atlantic salmon and its habitat. Canadian Recreational Fisheries Award from DFO, Salmon Conservation Award from the Atlantic Salmon Association and the Lieutenant Governor's Award for Conservation.



Bob Rutherford, Aquatic Habitat Consultant

Bob is a retired DFO Oceans and Fish Habitat Biologist/Manager who is now an aquatic habitat consultant with network connections to many coastal and watershed groups around the province.



Ruth Smith, Friends of Port Mouton Bay

Ruth grew up in Port Mouton on the South Shore of Nova Scotia and is the daughter and granddaughter of Port Mouton fishermen. Her ocean-related career began as a research assistant at the Fisheries Research Board of Canada and later at the Coastal Oceanography Division of DFO. For the past 15 years she has been a partner in Moucks Oceanology Ltd., a consulting firm that addresses marine water quality and other marine related issues including federal-provincial environmental assessments. Ruth has been a volunteer member of the Friends of Port Mouton Bay as part of their science team for the past eleven years.



Dick Stewart, Atlantic Herring Co-op

Dick is the Manager of the Atlantic Herring Co-op (Purse seine herring) and Bull Bay Scallop Association (inshore scallops). He resides in Yarmouth, NS and has been involved in the fishing industry for the past 40 years.



Robin Stuart, Aquaculture Consultant

Robin has a degree in Marine Biology from Dalhousie. He has worked in commercial aquaculture since 1973 in both fish and shellfish and has been a three-time President of the Aquaculture Association of Nova Scotia. He helped design and set up the Aquaculture Environmental Monitoring Program adopted by Nova Scotia. He owned his own salmon farm in 1987 to 1992 until it was lost to sea ice. He also set up and managed the Saddle Island Fisheries until it was sold to Cooke Aquaculture.





## Roundtable Final Report

He has managed oyster, trout, and salmon processing facilities and is currently an aquaculture consultant for Brussels Oysters, Trout and Salmon. Robin has authored or co-authored several science papers including one on the carrying capacity model for shellfish farms.

Karen Traversy, Coastal Coalition of Nova Scotia

Karen is a policy analyst and program evaluator who has been a member of the Coastal Coalition of Nova Scotia for the past 9 years. The Coalition is a network of community-based organizations working for coastal management policy for Nova Scotia and for a meaningful role for community and stakeholder input into resource use decisions in the coastal zone. Karen has experience with fisheries and habitat regulations and compliance, and ocean management. Having worked for 16 years for DFO in Ottawa, she has a Masters in Public Administration from Queen's University, Kingston.

Bill Williams, Association for the Preservation of the Eastern Shore (APES)

Bill was born on the Eastern Shore (Ostrea Lake in 1945) and spent five years in the RCAF. He joined the Dartmouth Fire Department and retired after 28 years as Operations Captain. Most of his leisure time was spent hunting and fishing and he has fished commercially on the Eastern Shore. Bill is Vice President of APES. The Association is very concerned about the effects that open pen salmon feed lots would have on pristine Eastern Shore waters and aims to have these pens removed from the ocean.



## Roundtable Final Report

### Appendix C

#### Terms of Reference for the Aquaculture Regulatory Review Roundtable

##### Nova Scotia Aquaculture Regulatory Review Roundtable

###### TERMS OF REFERENCE

□

December, 2013 □

□

#### 1. Overview □

□

The Government of Nova Scotia has committed to develop and implement a new regulatory framework for the aquaculture industry that will meet the highest standards of effectiveness while balancing the interests of industry, other marine users, local communities, and environmental protection. The Nova Scotia Department of Fisheries and Aquaculture has established an independent two-person Panel, consisting of Professors Meinhard Doelle and William Lahey of Dalhousie University, to develop this framework through a process that will be independent, transparent, consultative, collaborative, analytically rigorous and evidence-based □

□

The Panel's review is guided by a seven-person advisory committee, and the process includes community meetings, the formation of a Roundtable, targeted stakeholder meetings, the involvement of experts through a Science and Traditional Knowledge Roster, a program and community dialogue, and research and consideration of individual submissions. The Panel will prepare and consult on a draft regulatory framework, and will then submit their final report to Government □

□

#### 2. Purpose of the NS Aquaculture Regulatory Review Roundtable □

□

2.1. The NS Aquaculture Regulatory Review Roundtable ("The Roundtable") is an advisory body established by the Doelle-Lahey Panel ("the Panel") to provide feedback from a wide range of perspectives on a) issues relating to the future sustainable development of aquaculture in Nova



## Roundtable Final Report

□

Scotia with respect to environmental protection, social well-being and economic opportunity and (b) the development of recommendations regarding a new regulatory framework □

□

### 3. Composition □

□

3.1 Members of the Roundtable are appointed at the discretion of the Panel, and will represent the following sectors and interests: □

- First Nations □
- Municipalities □
- Aquaculture Industry □
- Fishing Industry □
- Coastal Communities □
- Environmental and Conservation Organizations □
- Economic Development and Tourism Interests □

□

3.2 Members will be selected to provide representation from the main areas within the province with an interest in aquaculture □

□

3.3 Members of the Panel will attend Roundtable meetings in an ex officio capacity □

□

#### 3.4 Criteria for membership include □

- support in good faith for the objectives of the independent Regulatory Review process □
- ability to bring to the table information and opinions from the sector represented □
- flexibility to attend all or most of the meetings □

□

3.5 Only members can attend; alternates cannot be accommodated unless an express exemption is given by the Panel members. Observers will not be allowed at the meetings □

□

### 4. Objectives □

□



## Roundtable Final Report

### 4.1 The objectives of the Roundtable are to:

- a) provide opportunities for more in-depth discussion of pertinent issues by First Nations representatives and aquaculture stakeholders;
- b) bring ideas and concerns from different stakeholder sectors and First Nations to the table;
- c) identify additional matters to be addressed by the Regulatory Review process, including questions to be considered by the Science and Traditional Knowledge Roster;
- d) identify outstanding issues and questions that may require additional study after the completion of this stage of the Regulatory Review;
- e) review and comment on public input received at the community meetings;
- f) identify what level of common ground or agreement can be achieved on the major issues that have been identified and determine how an effective regulatory approach might address them;
- g) advise the Panel on recommendations for possible inclusion in the Draft Regulatory Framework; and
- h) document the work and conclusions of the Roundtable stand-alone report to be submitted to the Panel.

### □

### 5 Procedures

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5.1 The Roundtable will be chaired by Wesley Griffiths. Minutes will be recorded by staff.

#### □

5.2 The Roundtable serves in an advisory context. Diversity of views will be welcomed and will be recorded. As a guiding approach, the Roundtable will seek to identify and further develop areas of common ground. Consensus will be sought on specific issues where possible and appropriate. Voting may be used at the discretion of the Roundtable to indicate the degree of support for a particular conclusion or recommendation. However, dissenting opinions will be noted and taken into consideration.

#### □



## Roundtable Final Report

□ 5.3 The minutes of the meeting will serve as the formal record of the Roundtable's work. Minutes will become public after they have been approved by Roundtable members. The views of the Roundtable (including the degree of consensus or dissent) will be documented in a stand-alone report and will be reported by the Panel in their submission to Government. However, recommendations contained within the proposed regulatory framework will be the responsibility of the Panel.

□ 5.4 Individual members are free to speak to the media in preference to their own views on matters relating to the aquaculture regulatory review. But they should not speak on behalf of the Roundtable, nor speak views expressed by other members during Roundtable meetings. The Roundtable chairperson will answer media enquiries about the Roundtable process (as opposed to the substance of Roundtable discussions).

□ 5.5 Meetings will be conducted in a manner that enhances participation by all members, ensuring that the widest range of views and ideas can be shared.

## 6. Meetings

□ 6.1 The Roundtable is expected to meet 8 times between November 2013 and April 2014. Meetings will generally last 0-12 hours over two days. The opportunity to participate by teleconference will be provided when required. In the event of bad weather likely to prevent a number of members from travelling, the meeting will be rescheduled.

□ 6.2 The meeting schedule subject to change as follows:

November 2013  
December 4-10  
January 9-10, 2014  
February 3-14  
March 20-21  
April 7-11



## Roundtable Final Report

□

□ “Snowdates” will be held in Reserve: □

March □ 7 □

April □ 3 □

□

6.3 Agendas will be drawn up by the Roundtable chairperson with input from members and will be circulated in advance □

□

7. Expenses □

□

7.1 Reasonable travel and accommodation expenses will be reimbursed at government rates requested □

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