
Ecology Action Centre Response to Nova Scotia's new Aquaculture Regulations

December 9th, 2015

The Ecology Action Centre (EAC) is disappointed with the [new regulatory framework for aquaculture](#), entitled "Aquaculture License and Lease Regulations (ALLR)" and "Regulations Respecting Aquaculture Management (RAM)" under Nova Scotia's [Fishery and Coastal Resources Act](#), unveiled on October 26th, 2015. The Nova Scotia government has produced [an overview](#) of the regulations. While the new regulations include aspects that markedly improve upon the previous regulatory framework, including creating necessary authorities and structure to monitor and manage day-to-day aquaculture operations, commitment to oxic conditions, the inclusion of a Containment Management Protocol to reduce escaped aquaculture fish, our conclusion is that the provincial government failed to incorporate critical aspects recommended by the government-appointed [Independent Aquaculture Regulatory Review](#) and the resulting [Doelle-Lahey Report](#). The aquaculture regulatory review process sought advice from an [Advisory Committee](#), a [Roundtable](#) and a Knowledge Roster, that included academic scientists and First Nations and conducted extensive public consultations across the province.

Upon its release in December 2014, there was [broad public support](#) across a range of sectors, from communities, businesses, conservation organizations and fishing industry associations, for full implementation of the Doelle-Lahey report, marking significant progress on an extremely contentious issue in Nova Scotia. Full implementation, which would be measured by the government's response in crafting new regulations, was seen as the first major test of the government's willingness and ability to provide the "regulatory excellence" called for in the [One Nova Scotia Commission Report \(aka Ivany Report\)](#) which set forth 19 goals and 12 transformational changes to alter the downward economic trajectory of Nova Scotia. In addition, East Coast Environmental Law has also published reports [reviewing the past aquaculture regulatory framework](#) in Nova Scotia, as well as a comparative analysis between [Nova Scotia and Maine](#) and a comparative analysis of [aquaculture regulatory frameworks in Canada](#), adding to the extensive work completed to bring Nova Scotia towards "regulatory excellence".

Government was given sound rational and detailed direction in the [Doelle-Lahey Report](#) on how to implement the necessary regulatory improvements, including recommendations on "foundational elements" of a new regulatory framework. Briefly, these included: a) serious consideration of coastal community concerns, b) critical role effective regulation plays in establishing social license, c) limiting ministerial discretion in order to build trust and confidence in the regulatory system and d) ensuring that the Department of Fisheries and Aquaculture (DFA) has the capacity to administer the regulations. In addition to the

foundational elements, seven guiding principles were to be followed in the design and implementation of a new regulatory framework: effectiveness, openness, transparency, accountability, proportionality, integration and precaution.

Despite this overarching advice, and the detailed recommendations for specific inclusions in new regulations, the omissions in the regulations mark [a failure of government](#) to deliver “regulatory excellence” and take leadership on a troublesome industry that has caused incredible conflict in coastal communities.

We detail below the discrepancies between what was recommended in the Doelle-Lahey Report and what is actually included in the new regulations. Our review is not a full legal analysis, but reflects our observations having been part of the Doelle-Lahey Roundtable AND Advisory Committee and a member of the Aquaculture Regulatory Review Committee during the summer and fall of 2015.

General Omissions and Adherence to Principles / Foundational Elements

We note several important omissions from the context surrounding the approval of the new regulations. These include:

- Failure to adequately update the goals of the *Fisheries and Coastal Resources Act*;
- A commitment to low impact / high value aquaculture;
- Significant reduction of Ministerial discretion, and;
- Achieving social license.

Changes to the *Fisheries and Coastal Resources Act* The Doelle-Lahey Report details a list of goals and objectives to set the context of the new regulatory framework to be included in legislative changes to the *Fisheries and Coastal Resources Act*. [Amendments were made](#) to the *Fisheries and Coastal Resources Act* on April 21, 2015 but no specific changes were made to include the protection of wild salmon, despite the Doelle-Lahey recommendations.

We are particularly concerned with the failure to include a specific reference, as recommended by Doelle-Lahey, of:

“Ensuring that aquaculture is developed and conducted with due regard to the health, well-being and recovery of the wild Atlantic salmon population in Nova Scotia rivers as well as any endangered species that may be affected by aquaculture operations (D-L, page 32, h).

The language instead in Chapter 25 is as follows:

(h) ensure that aquaculture is conducted with due regard to the health, well-being and recovery of species at risk;

In the case of wild salmon this is particularly troubling given the risk of escapes, disease transfer and potential impact of sea lice infestations to wild salmon populations.

We are also concerned with the changes under Clause 19, to the Act, that make it impossible for the public to obtain records of disease, as per:

“Makes a consequential amendment to the Freedom of Information and Protection of Privacy Act to provide that the confidentiality provision in subsection 8(4) of the Fisheries and Coastal Resources Act respecting veterinary medical records prevails over provisions in the Freedom of Information and Protection of Property Act that may authorize disclosure.”

A critical aspect of new regulations was to increase the transparency to the public. As there is [scientific evidence regarding disease transfer](#), particularly viruses between farmed and wild fish, removing the ability of the public to access veterinary records significantly reduces the mechanism with which both the regulatory system and the industry can be held accountable.

Low Impact / High Value Direction for Aquaculture The overarching principle of the Doelle-Lahey report and its recommendations was to low impact and high value aquaculture development. Aquaculture expansion, particularly for open net pen fin fish farming has been both considered and approved largely on an economic basis, with the goal of adding not only to the provincial GDP but also specifically to coastal communities in rural Nova Scotia. The promise of economic renewal has yet to [come to fruition in many communities](#) . In making the following statement in the report, the Doelle-Lahey panel began the important process of regaining public trust (underlined emphasis added):

“In this report, we conclude that a fundamental overhaul of the regulation of aquaculture in Nova Scotia is called for. We conclude that this overhaul should be guided by the idea that aquaculture that integrates economic prosperity, social well-being and environmental sustainability is one that is low impact and high value. By this, we mean aquaculture that combines two fundamental attributes: it has a low level of adverse environmental and social impact, which decreases over time; and from the use of coastal resources it produces a positive economic and social value, which is high and increases over time.” (D-L Report, pg. vii)

While we may not expect the term low impact / high value to be contained in legal or regulatory frameworks, we would expect that communications resulting from the recent regulatory changes including reference to the intention of the changes would include this aspiration. Nova Scotian's are increasingly demanding that economic development is not done at the expense of the environment and full implementation of the Doelle-Lahey Report was an opportunity to chart a new course. Without a clear direction on future aquaculture development, and with the missing pieces of the new regulations, it appears that this intention has been abandoned.

Ministerial Discretion Limiting ministerial discretion is a foundational element of the Doelle-Lahey recommendations. Because Ministers are often put in the difficult position of making decisions around issues that require perceived tradeoffs between economic benefits and environmental and social costs, and because the Minister's position can change, removal of discretion can help build public trust as well as provide certainty around decision making in adherence to clear standards. Limiting discretion can also increase transparency of decision-making.

“The pervasive discretion built into the current regulatory framework must be limited in a new regulatory framework if the new framework is to enjoy the trust and confidence it needs to be successful.” (D-L Report, Pg. ix)

The proposed regulations, rather than limit Ministerial discretion, instead seem to add to the discretionary powers. For example, from clear discretion in leasing options as in Section 5 of the ALLR “The Minister may entertain an unsolicited proposal for an option to lease in a manner determined by the Minister” to Section 16 of the RAM the “Minister may establish an area with multiple aquaculture sites as an aquaculture management area for the purpose of managing health of aquatic animals in the area.” These are just two examples of where there are avenues for Ministerial discretion to be used, in absence of public consultation and science-based decision-making. Similar examples exist throughout the new regulations and in our view diminish the recommendations for transparency as well as reduction of ministerial discretion as per the Doelle –Lahey recommendations.

Achieving Social License The Doelle-Lahey Report makes it clear that industry has a serious social license problem and that the views and wishes of local communities in which aquaculture – particularly finfish operations – takes place must have real bearing and be given serious consideration in the regulatory and site approval process. The Report makes several comments regarding the need for social license, the need for meaningful opportunities for the public to be informed and participate in the regulatory process and the importance of effective regulation in maintaining social license. These include:

“The attitude that informs regulation must take the concerns of those who live in coastal communities seriously and at face value.” (D-L Report, Pg. 22)

“The public will have multiple opportunities, including a mandatory hearing on every application for a licence, to contribute to decision making in the licensing process.” (D-L Report, Pg. viii)

“Ensuring that members of the public have meaningful opportunity to be informed about and to participate in the regulatory process, including early notification of proposed aquaculture operations, proposed expansions of existing sites and proposed transfer of ownership of existing sites.” (D-L Report, Pg. 35)

“The licensing and leasing process will be conducted as a kind of specialized environmental assessment that incorporates an integrated understanding of environmental, social and economic issues into licensing and leasing decisions.” (D-L Report, Pg. viii)

The critical role that effective regulation plays in constituting social licence and in building upon social licence once it is established must be embraced by government and the industry. (D-L Report, Pg. ix)

Rather than aspiring to achieve the above, the new regulations seem aimed at minimizing community involvement to one public hearing for major new applications and the standard 30 day written comment period for all others. This falls short of the fulsome level of public engagement described in the Doelle-Lahey Report, and as a result will likely do little to build public confidence in the lease approval process or the capacity of the provincial government to adequately enforce new requirements.

Specific Omissions from the ALLR and RAM

Below, we detail the recommendations of the Doelle-Lahey Report and the actual inclusion in the Aquaculture Regulations, and highlight the omissions which we feel are the most important in achieving the implementation of the Doelle-Lahey Report and thereby attaining a commitment to environmental sustainability as well as the rebuilding of public trust in the ability of Nova Scotia to regulate aquaculture on our coasts.

We have focused on the following, as these are areas where the EAC has been most concerned, regarding environmental impact of open net pen fin fish farms and the ability of the public to have meaningful engagement in how aquaculture happens in Nova Scotia:

1. Red, Green and Yellow Zones
2. Site selection including minimum standards and separation from competing uses, wild salmon rivers and protected areas
3. Use of drugs and toxic chemicals
4. Fish farm appeal process
5. Public engagement in site selection process
6. Maintenance of oxic conditions

1. Red, Green and Yellow Zones

Aquaculture site selection based on zoning is a common practice in other jurisdictions. Countries like [Norway](#) and [Scotland](#) have zoning in place for their aquaculture industries. This is the single most important structural recommendation of the entire regulatory framework

proposed in the Doelle-Lahey Report. The effectiveness of the new regulations is significantly compromised by not including a zoning system. Both industry and coastal communities will be left with significant uncertainty. The 2009 "[Road Map for Aquaculture](#)" commissioned by the DFA clearly shows that a significant amount of Nova Scotia's coast line is not suitable for open net pen fin fish farming.

Additionally, zone management is increasingly seen globally as a crucial requirement to help manage cumulative environmental impacts, shared disease risks, and boom and bust cycle of aquaculture business. Broad industry support for zone management was evidenced at the recent international GOAL (Global Outlook on Aquaculture Leadership) conference in Vancouver where it was a key focus topic (no less than 7 formal presentations on zone management), and the Global Aquaculture Alliance (GAA) is in late development of a Zone Management Standard.

The new regulations **do not include the designation of specific zones** where aquaculture can and cannot take place. (D-L Advice: Site Selection and Utilization for Fin Fish Aquaculture (Red, Yellow, Green Zoning)).

Doelle-Lahey Recommendation	Aquaculture License and Lease Regulations
<p>“We recognize that fin-fish operations, even if well-regulated and operated, are not appropriate in all coastal waters around Nova Scotia. We conclude that a new regulatory framework must ensure that marine-based fin-fish farming occurs only in coastal waters that are suitable for that kind of aquaculture and where it is compatible with other important uses of those waters. For that reason, <u>one of our core recommendations is the creation of a classification system under which coastal areas would be rated as Green, Yellow or Red based on their relative suitability for fin-fish aquaculture.</u>” (D-L Report, Pg. vii, details Pg. xv and pgs. 71 - 83).</p> <p>“Green areas would be areas found to be suitable for finfish aquaculture, Yellow areas would be areas that have the potential to be suitable but are not ideas and would require a more careful</p>	<p>Refer definition in ALLR “aquaculture development area” to be designated by the Minister under 56(1) a of the <i>Fisheries and Coastal Act</i>, as well as a suite of factors to be considered in decisions relating to marine aquaculture sites (Section 3), rather than setting out specific zones.</p>

<p>approach.., Red areas would be areas found to be generally unsuitable for fin-fish aquaculture.” (D-L Report, Pg. 72)</p>	
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What does this mean: Without adherence to the proposed “red, yellow and green zones”, the new regulations effectively only provide for “green zones” through the power of the minister to create dedicated “Aquaculture Development Areas”. But there are no corresponding yellow (proceed with caution) or red (no-go) zones. This provides no certainty to communities or the aquaculture industry and does not take into consideration the fact that much of the province is not suitable to open net pen fin fish aquaculture.

2. Site Selection including Minimum Standards, Separation from Competing Uses and Wild Salmon Rivers and Protected Areas

If the government is ignoring the advice to create specific zones, then we would expect that the ALLR be specific as to where open net pen fin fish farming cannot occur, by being explicit on siting requirements, including specifying biophysical parameters, distances from competing uses and restrictions on siting near wild salmon producing rivers and legally protected areas (e.g. National Parks, Marine Protected Areas and Wilderness Protected Areas). These were all highlighted in the Doelle-Lahey Report and given specific direction for regulatory inclusion.

Instead, the new regulations only require that parameters and other uses be “taken into consideration” when making license decisions. This effectively leaves important parameters up to the discretion of decision makers and does not provide any clear direction for where open net pen fin-fish farming **should not occur**.

Doelle-Lahey Recommendation	Aquaculture License and Lease Regulations
<p>“We conclude that the regulatory framework for aquaculture needs to be greatly strengthened in preventing fin-fish aquaculture from taking place in coastal waters that are not suitable for that kind of aquaculture.” (D-L Report, Pg. 16)</p> <p>Green areas for fin-fish operations in coastal waters for salmon or other fin fish species be determined based on the following criteria:</p>	<p>In making decisions related to marine aquaculture sites, the Review Board or Administrator must take all of the following into consideration:</p> <ul style="list-style-type: none"> (a) optimum use of marine resources (b) the contribution of the proposed operation to community and Provincial economic development (c) fishery activities in the public waters surrounding the proposed aquaculture operation

<p>Biophysical suitability of sites (water temperature, water depth, current speed, flushing frequency and other hydrological and bottom conditions). (D-L Report, Pg. 75)</p> <p>Coastal conditions show that fin-fish aquaculture will not conflict with other values including: recovery of an endangered species, competing use that is of significant economic, cultural or social value, protection of wild salmon, protection of land under legal protection. (D-L Report, Pg. 75)</p> <p>“The regulatory framework should be clear and explicit about the need for appropriate physical separation between marine-based aquaculture and salmon rivers and known salmon migration routes.” (D-L Report, Pgs. 110-111)</p> <p>Separation from “clearly competing use that is of significant economic, social or cultural value” (D-L Report, Pg. 75-76)</p> <p>Separation of aquaculture sites from land that is under legal protection. (D-L Report, Pg. 75-76)</p>	<p>(d) oceanographic and biophysical characteristics of the public waters surrounding the proposed aquaculture operation</p> <p>(e) the other users of the public waters surrounding the proposed aquaculture operation</p> <p>(f) the public right of navigation</p> <p>(g) the sustainability of wild salmon</p> <p>(g) the number and productivity of other aquaculture sites in the public waters surrounding the proposed aquaculture operations</p>
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What does this mean: We explain in detail the results of these differences in the categories below.

Minimum Standards

The ALLR **does not include** minimum biophysical standards where fin fish aquaculture cannot occur. We would have expected that the regulations clearly state specific science-based parameters on depth, currents, flushing, etc. An excellent tool, titled [DEPOMOD](#) has been developed by the Department of Fisheries and Oceans (DFO) and can be used to [predict seafloor impacts](#) as well as for site selection. Failure to include minimum standards mean that

open net pen fin fish operations will continue to be approved in areas where we know that serious environmental impacts occur, such as Shelburne Harbour, Port Mouton and Jordan Bay.

Wild Salmon

There is no requirement to physically separate open net pen fin fish farms from wild salmon bearing rivers. This is critically important given the precarious state of our wild Atlantic salmon and the known impacts of open net pen salmon farms on nearby wild salmon populations.

The Doelle-Lahey report called for explicit measures to protect wild Atlantic salmon, but the government failed to provide that protection. There is nothing in the new regulations that would specifically prevent a salmon farm from being placed at the mouth of the Margaree or St. Mary's or any other salmon-bearing river in the province. Instead the government's new regulations only offer a general and overly-vague clause, which simply states that "the sustainability of wild salmon" must be considered. But what does "considered" mean? What are the parameters? What are the factors to be considered? There is no guidance for an adjudicative body on which to base decisions. This was precisely why the "physical separation" of salmon farms and wild salmon rivers was supposed to be included in the new regulations according to the Doelle-Lahey Report. To give direction and guidance on HOW to protect wild salmon the Report spelled out three specific requirements for inclusion in the new regulatory system:

- #1 - better cage containment systems to reduce escapes,
- #2 - some form of identification for escaped aquaculture fish,
- #3 - "appropriate physical separation between marine-based aquaculture and salmon rivers and known salmon migration routes" (D-L Report, Pgs. 110-111).

Only the first provision was included in the government's new regulations through the Containment Management Measures. The government rejected the specific requirement to provide appropriate physical separation from wild salmon rivers, leaving them vulnerable to the known negative impacts of salmon farms on nearby wild salmon populations.

Areas of Conflicting Use

The Doelle-Lahey Report also called for clear separation of fin-fish farms from areas that have "clearly competing use that is of significant economic, social or cultural value" and "land that is under legal protection". The government rejected these provisions as well. The result, along with the absence of the ability to designate Red (no-go) Zones, means that every bay, harbour and cove along Nova Scotia's coast is still open for aquaculture.

3. Use of Drugs and Toxic Chemicals

The EAC has been very involved in the consultations on the federal Aquaculture Activity Regulations (AARs), which came into effect in summer 2015, and which [we opposed vigorously](#) together with over 100 scientists from across Canada, as they serve to weaken existing pesticide regulations as well as remove responsibility for pesticide regulation in aquaculture operations from Environment Canada. We are particularly concerned about the use of pesticides in areas overlapping or adjacent to important areas for various stages of the lobster lifecycle.

The Doelle-Lahey Report called for banning the use of certain toxic chemicals in the marine environment immediately and the reduction and eventual elimination of all other chemicals and drugs over time. The regulations require none of this.

Doelle-Lahey Recommendation	Regulations Respecting Aquaculture Management
<p>"We recommend that Nova Scotia's regulatory framework should prohibit the use of any substance or method of anti-fouling that results in the dispersal of copper, other heavy metals or potentially harmful chemicals into the environment." (D-L Report, Pgs. 52-53)</p> <p>"An ongoing goal of further reducing and to eventually eliminate the release of all chemicals, medication and pesticides into the environment should be an objective of the regulatory framework." (D-L Report, Pg. 10)</p> <p>"Our conclusion is that the regulatory framework in Nova Scotia must manage the sea lice problem through proper site and species selection, separation distances, and responsible operation of sites, with the goal of avoiding the need for either medicinal treatments or the application of pesticides by "bath treatment."" (D-L Report, Pg. 11)</p>	<p>Section 14: Farm operation section of Farm Management Plan must include any information the Minister requires to ensure the responsible operation of an aquaculture operation including information and procedures that are consistent with industry best practices relating to all of the following</p> <p>(a) storing and disposing of feed, fuel, lubricants and chemicals</p> <p>Section 20: An aquaculture license holder must report any use of any of the following at their aquaculture operation to the Minister in the manner and at the times determined by the Minister:</p> <p>(a) antibiotics</p> <p>(b) products to treat sea lice</p>

What does this mean?: Essentially, the new regulations ignore the recommendations of the Doelle-Lahey Report. Open net pen fin fish sites will be allowed to use chemicals to treat sea

lice, despite their [known impacts on lobster](#) and other crustaceans. Anti-fouling chemicals will continue to be allowed to be used, and accumulate in seafloor sediments, antibiotics and in-feed pesticides will continue to be allowed.

4. Fish Farm Appeal Process

The Doelle-Lahey Report gave specific direction on the creation of an independent Aquaculture Review Board (ARB) whose sole purpose was to hear and rule on applications from the public to have a persistently problematic fish farm’s license revoked. The government’s new legislation creates the new ARB, but the government has given it an entirely different role. It is now ONLY to hear and determine applications for new fish farms. And only those not inside any government approved “Aquaculture Development Areas” which are not subject to review by the independent ARB.

This function is not a bad thing in and of itself, and in fact it has merit, provided, of course that the government ensures that the composition of the ARB is representative and is not overly influenced by industry proponents. We are most concerned with the fact that there is no avenue for the public to have concerns about persistently problematic fish farms heard by an impartial body, and have those concerns acted upon. The problem is not in the role the ARB has been tasked with. Rather, it is in the other role that they will NOT be performing. The one specifically prescribed in the Doelle-Lahey Report: Hearing applications from the public for the revocation of chronically poor performing fish farm leases. That function does not exist in the government’s new regulations.

Doelle-Lahey Recommendation	Aquaculture License and Lease Regulations
<p>We recommend that members of the public be provided with an opportunity set out in legislation to apply to have a lease revoked where there is clear evidence of biophysical unsuitability of the site, or where there is a clear pattern of substantial non-compliance with terms and conditions of the licence. (D-L Report, Pg. 117)</p> <p>We recommended the creation of an independent board to hear and determine applications from the public to have a licence revoked where there is clear evidence of biophysical unsuitability</p>	<p>This principle was not included in the recent amendments to <i>Fisheries and Coastal Resources Act</i> and is therefore not in legislation</p> <p>The independent ARB has been given no power to hear applications from the public for site revocations.</p>

<p>of the site, or where there is a clear pattern of substantial non-compliance with terms and conditions of the licence.” (D-L Report pg. 117)</p>	
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What does this mean? There is no mechanism in the provincial government's new regulations that allow citizens or communities to apply for a fair hearing if they have a reasonable case against a persistently problematic fish farm. The only recourse the public is allowed under the government's new regulations is to appeal to the Supreme Court of Nova Scotia, which poses an insurmountable barrier for most people.

5. Public Engagement in Site Selection Process

The Doelle-Lahey Report recommended deep public engagement with affected communities in the aquaculture site licensing and leasing process. The new regulations do not embrace this approach. Rather, they seem to minimize public engagement in decision-making in the site selection process and provide only limited opportunities for the public to provide “comments”.

Doelle-Lahey Recommendation	Aquaculture License and Lease Regulations
<p>“The public will have multiple opportunities, including a mandatory hearing on every application for a licence, to contribute to decision making in the licensing process.” (D-L Report, Pg. viii)</p> <p>“The licensing and leasing process will be conducted as a kind of specialized environmental assessment that incorporates an integrated understanding of environmental, social and economic issues into licensing and leasing decisions.” (D-L Report, Pg. viii)</p>	<p>See Sections 12-36 of the new regulations outlining a detailed process for scoping and adjudicative hearings, intervenor status, etc. that pertains to new licenses only.</p>

What does this mean: According to the new regulations, only applications for new aquaculture sites that are not in one of the new "Aquaculture Development Areas" (ADAs) will be adjudicated by the new Aquaculture Review Board (ARB). In those cases, interested

parties can apply for "intervenor" status within ten days of public notice, and at the actual hearing members of the public are allowed the opportunity to speak for 6 minutes. The ARB has total authority over granting or refusing intervenor status with no avenue of appeal. The regulations direct the ARB to grant intervenor status only to someone who "is substantially and directly affected by the hearing". For many communities, the process to apply for intervenor status is prohibitive and includes many technical requirements that will discourage most people from seeking intervenor status.

All applications for new sites inside one of the new "Aquaculture Development Areas" (ADAs) selected by the minister and all applications for anything dealing with pre-existing sites (lease renewals, expansions, restocking, reallocation, etc.) in an ADA will be adjudicated solely by a new Department of Fisheries official called "The Administrator". In these, likely the majority of cases, there will be no public hearings and only the standard government-issue 30 day written comment period. Hardly the fulsome level of public and community engagement prescribed for in the Doelle-Lahey Report.

6. Maintenance of Oxidic Conditions

A critical recommendation of the Doelle-Lahey Report was for open net pen fin fish farming sites to maintain oxidic conditions, ensuring that sediments contain biologically meaningful levels of oxygen. This is important to maintain ecological function of sea floor sediments, maintain biodiversity and ensure that areas that are important for commercial species, particularly lobster, sea cucumber, sea urchins, etc. In addition, one of the main complaints of the former regulatory system was the lack of consequences following the reporting of anoxic conditions. The Nova Scotia government has used as its monitoring basis the 2011 [Environmental Monitoring Plan](#) (EMP). Parameters for oxidic conditions are outlined in Table 1 of the EMP and include <750uM sulphides as level A oxidic conditions.

Doelle-Lahey Recommendation	Regulations Respecting Aquaculture Management
<p>“It should be a basic and fundamental condition for the licensing of fin fish aquaculture in a marine setting that oxidic conditions (normal or specified levels of oxygen in the water column) can be and have been maintained.</p> <p>This would not mean that isolated Temporary failures to meet oxidic conditions would warrant revocation of a licence. It would however warrant taking action to bring conditions back</p>	<p>Definition of “oxidic conditions – in relation to subaquatic lands, means oxygen availability indicated directly or indirectly by a verifiable and quantifiable measure”</p> <p>Section 10 of RAM ...1) Environmental monitoring section of a Farm Management Plan must include any information and procedures the Minister requires to ensure effective environmental monitoring of the site</p>

to the oxigen level and to be maintained there on a consistent basis. To ensure that oxigen conditions are maintained and that licence conditions are properly calibrated to achieve and maintain that objective, there should be a legislative requirement that terms of the license will be reviewed following the conclusion of each growing cycle to ensure that the site conditions are suitable for another growing cycle, and to ensure that appropriate adjustments are made to following periods, stocking density and other terms and conditions of the licence.

Where experience suggests that a difficulty in maintaining oxigen conditions lies not with the operation of the licensed operation or with its compliance with regulatory requirements but rather with the biophysical conditions of the site, **it should be clear that the appropriate regulatory response is to require removal of the operation from the site** or its conversion to a kind or level of aquaculture that is appropriate to the site.” (D-L Report, Pg. 52)

including all of the following:

- (a) process for measuring oxigen conditions within the boundaries of the site and at any other locations determined by the Minister
- (b) monitoring schedule and associated process for reporting results
- (c) sampling locations for each monitoring event
- (d) processes for assessing and reporting on the stocking levels associated with monitoring events
- (e) a mitigation plan

Section 32 Oxigen Conditions Remediation Plan

- (1) A holder of a license for finfish aquaculture in a marine aquaculture site must conduct their aquacultural operation in a manner that maintains oxigen conditions that indicate sufficient oxygen is present within the boundaries of their site
- (2) If monitoring results indicate that the oxigen conditions referred to in subsection (1) are not maintained, and aquaculture license holder must to all of the following:
 - (a) conduct follow up (level II) monitoring no later than 35 days after obtaining monitoring results;
 - (b) submit the results of the follow up (level II) monitoring conducted under clause (a) along with an updated mitigation plan, no later than 14 days after conducting the monitoring for the Minister’s approval.
- (3) In addition to the requirements in subsection (2) the aquaculture license

	holder must take any action at the aquaculture site required by the Minister to reduce environmental impact, including any of the following: (a) expediting the harvest program (b) extending a fallow period (c) limiting approved stocking levels (d) adjusting the site layout

What does this mean?: Because the measurement and reporting of oxidic conditions is largely dependent on the responsible execution of the relevant aspects of Farm Management Plans and the proper measurement of sediment qualities, as well as proper sampling procedure – none of which is specified in the regulations. The regulations provide for several actions to be taken following level II monitoring, but these do not include the recommended removal of the operation from the site if oxidic conditions are not maintained. There will have to be a significant increase in monitoring, reporting and enforcement to test if the regulations can in fact be effective. Nevertheless, there is no provision to move the operation and without clear zoning that would predetermine areas that would be prone to anoxia (shallow depths, low flushing, sedimentary / soft bottom), a significant amount of uncertainty remains as to the effectiveness of the new regulations.

Conclusion

It is our contention that a moratorium on new licences remain in place, until such time as the regulations can be amended to fill the critical gaps in what was recommended by Doelle-Lahey, approved broadly by coastal communities and the aquaculture industry yet not adhered to by the provincial government. As noted by Doelle-Lahey:

“It is critical that we stress the following point: our conclusion that we should not recommend a permanent moratorium assumes the adoption and effective implementation of the regulatory framework we have outlined in this report.” (D-L Report, Pg. 16)

There are many gaping holes in the regulatory goals and principles and key elements of the Doelle-Lahey regulatory framework are missing in the new aquaculture regulations released by the province. While we recognize improvements over the previous regulations, the ALLR and RAM fall far short of what is expected by the public and far from the “regulatory excellence” that Nova Scotia needs to achieve to reach its economic imperatives.

The Doelle-Lahey report is also clear on what full implementation means:

“The proposed framework will be fully implemented when two benchmarks have been reached. The first will be reached when all the core elements of the framework we have proposed have been substantially adopted and implemented. The second will be reached when it can be said that a fundamental overhaul of the whole of the regulatory system has taken place – an overhaul that is broadly consistent with (a) our analysis of what is wrong with the current system, (b) our conclusions as to how the regulation of aquaculture in Nova Scotia must change, and (c) the low-impact and high-value philosophy, the regulatory goals and principles and the foundational elements of effective regulation we have articulated.” (D-L Report, Pg. 142)

While there has been a regulatory overhaul, it is not sufficient. Critical additions to the *Fisheries and Coastal Resources Act* were not made. The regulatory overhaul does not adhere in full to the principles or foundational elements and the low impact /high value philosophy has not been included in government efforts to date. We conclude, therefore, that neither benchmark has been reached.

The Doelle-Lahey Report also contemplated moving regulatory authority to the Department of Environment.

“We have concluded that responsibility for regulation of aquaculture should remain with the DFA. The proviso to this conclusion is that it depends on acceptance and implementation of our proposed regulatory framework” (D-L Report, Pg. xi)

Since the Department of Fisheries and Aquaculture (DFA) has failed to fully or substantially implement the Doelle-Lahey Report it is reasonable to suggest that that responsibility now be transferred to Nova Scotia Environment. A better outcome would be for the DFA to go back and put the missing pieces of the Doelle-Lahey Report into the new regulations for aquaculture in Nova Scotia.