From: Andre Thiffault
To: Aquaculture Review Board
Subject: Kelly salmon aquaculture
Date: March 9, 2021 4:25:42 PM

** EXTERNAL EMAIL / COURRIEL EXTERNE **
Exercise caution when opening attachments or clicking on links / Faites preuve de prudence si vous ouvrez une pièce jointe ou cliquez sur un lien

To whom it may concern my name is Andre Thiffault [redacted] Digby NS in regards to any expansion or changes to this site in front of our property is totally unacceptable. We have seen for the past 21 years increasing noise pollution , totally disregard to the residents along this road , fish escape and massive fish die off not to mention chemicals, antibiotics and feces polluting our waters. Imagine tourist coming to this province and the first thing they see is these horrible 20 fish pens. They have expanded these pens well beyond and are within [redacted] from our home unbelievable in a residential area. For the few jobs created money can be spent in a more useful way. They have loud noise makers, pressure washers, bright lights early hour harvesting of fish , screaming swearing , loud noisemakers, screaming seagulls trapped in net cages. Marine life at fish of being killed examples seals. They have to go plain and simple. Other neighbours have complained about high noise levels. If they know Kelly aquaculture are being observed they abide by the rules otherwise they get away with it. We need this operation to be removed once and for all. Thank you.

Sent from my iPad

RECEIVED
By Nova Scotia Aquaculture Review Board at 8:36 am, Apr 26, 2021

Comments on Kelly Cove Salmon Ltd's application for a boundary amendment to marine finfish licence and lease AQ#1039 in Annapolis Basin, Digby County.

April 24, 2021

My comments relate to sections 3(b) and 3(g) of the Aquaculture Licence and Lease Regulations.

3(b): the contribution of the proposed operation to community and Provincial economic development;

My argument is that salmon aquaculture at site 1039 and all of the others in NS provide very little economic benefit to this province. NSDFA has been telling the public and our MLA's that the farm gate value of aquaculture products grown in NS is actually the value to the economy of NS.

For example on Oct 14, 2015 the Director of Aquaculture, Mr Bruce Hancock, stated to the Committee on Public Accounts:

> Right now aquaculture plays a big role in the rural economy. As I mentioned, our farm-gate value is around $60 million a year, and that's just the direct farm-gate sales. That does not reflect the processing that occurs, it doesn't reflect the feed mill operations that we have in Truro, all the logistical support that backs that up. *So it's an industry that's worth substantially more than that number*, ... (italics added)

And in DFA's News Releases:[1]

May 1, 2013, "The aquaculture industry generates about $50 million annually."

Jan 12, 2016, "Aquaculture is worth more than $60 million to the provincial economy…"

Feb 01, 2017, "Aquaculture is worth about $60 million annually to the Nova Scotia economy…".

Salmon aquaculture accounts for close to 80% of that dollar value and as Cooke's NS grown salmon are taken directly to NB for processing and sale they provide zero benefit to NS. Government statements on the value of aquaculture to NS should therefore not include Cooke's Atlantic salmon.

For site 1039 and all of Cooke's other sites they bring their slaughter boats, well boats and crews from NB. Cage repairs are done by a NB company. Many of the salmon smolts that are destined for cages in NS come from hatcheries in NB. When the fish are transported by truck it is done by Shoreland Transport from NB.

[1] Find all DFA news releases here: https://novascotia.ca/news/results.asp?deptnum=110

Obviously Cooke does spend money in NS on wages and some supplies however DFA also spends a considerable amount on regulating and supporting the industry.

In 2016 DFA began a $12 million five year program to develop the aquaculture industry, adding about $2.4 million per year to their budget, which brought it to just over $5 million per year for aquaculture.

DFA doesn't disclose how much of their budget is spent on salmon aquaculture but I would think most of it since that is the focus of the new legislation and regulations and I believe most likely the main purpose of the new lab, the new ROV and the additional staff.

It's practically impossible for me to know how much money is spent by DFA and NSE on regulating and supporting this industry but I estimate that NS gains very little if anything from it.

This industry creates conflict with fishermen and residents, sends plastic/styrofoam pollution into our ocean and has a negative impact on the few remaining wild salmon in NS and NB. This is not a benefit to NS.

3(g): the sustainability of wild salmon;

Aquaculture site 1039 is practically at the mouth of Bear River which has seen efforts to restore the wild salmon population. Those efforts have been wiped out in the past by farmed salmon that escaped from site 1039 and then swam up the river[2].

Wild salmon are in a dire situation in NS and DFO Science[3] reports that there is no room for any additional harm to wild stocks. They say, referring to the Southern Uplands Designatable Unit whose area includes site 1039, that "Species, stock or population is already threatened or endangered: further impact may lead to permanent loss". They also say that "The likelihood of wild/farmed salmon interaction effects will increase as the number of sites and total individuals among sites increases".

One way that happens is when escapees interact with wild salmon. COSEWIC[4] stated in 2015 that:

> *Aquaculture Atlantic Salmon* are raised for commercial purposes, not for conservation of the wildlife species, and *are genetically distinct from wild salmon* … and they said;

[2] A description of the event by Chief Frank Meuse can be found in the Salmon Wars documentary at 48:24 minutes. https://www.youtube.com/watch?v=NIPcgfJocRo

[3] http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2011/2011_017-eng.html

[4] https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/cosewic-assessments-status-reports/atlantic-salmon-clarification-note-2010.html

> There is a considerable body of evidence indicating that Atlantic Salmon that escape from fish farms survive, return to streams to spawn, and hybridize with wild Atlantic Salmon, and that such interactions with farmed salmon results in the reduced performance and fitness of the recipient wild population.

Cooke Aquaculture has admitted that it is not uncommon for their salmon to escape. They say the public understands that fish escapes can occur if major storms cause damage to the pens.

Escapes have happened at the Rattling Beach site and were devastating for the Bear River wild salmon. For that reason it should not be located where it is and at the very least should not be as large as it is. For the sake of wild salmon every effort should be made to reduce the size of this site.

Sea lice from salmon farms are another source of harm to wild salmon. A report[5] by researchers in BC describes the problem this way :" Amplified sea lice infestations due to salmon farms are a potential limiting factor to wild salmonid conservation."

The company has said that there are no sea lice in NS however when my wife and I lived next door to site 1040 we were able to observe the operation first hand and the presence of sea lice was obvious. We could see vets removing sea lice from the fish they were sampling.

Site 1039 is visible from site 1040, only 2.7km away and in the same basin so I believe our observations at 1040 are sure to apply to the conditions at 1039.

FOIPOP FIS-13-1 page7 below reveals that just one month after being put into the cages at site 1040 the smolts already had sea lice. The handwritten comment on the email reads "Added Caligus common none to max of ten per fish"

To reduce the harm to wild salmon from high numbers of lice, DFO requires companies in BC to take action when there are more than 3 motile leps per fish.

Yet a veterinary inspection near the end of the same grow-out at site 1040 reveals that the salmon now have "~ 5 to 6 Adult leps per fish". See FIS-14-3 page 2 below.

We have no record of these fish being treated for sea lice, however with 5 to 6 leps per fish not treating them and allowing that many sea lice to exist in the Annapolis Basin could be causing the harm to wild salmon that DFO is trying to prevent.

At the public meeting for the Liverpool expansion KCS told us that they have not had to treat for sea lice in NS. That statement is untrue. The veterinary report below, FIS-15-4

[5] https://royalsocietypublishing.org/doi/10.1098/rspb.2004.3027

page 15, shows that the second stocking of site 1040 had been treated for sea lice with Ivermectin.

Another source of harm to wild salmon is seals, they are attracted to open net pen sites and the following vet report, FIS-15-4 page 4, shows the effects. We could see seals at site 1040, I can't imagine that site 1039 was any different. Again, it is only 2.7km away and visible from site 1040.

KCS's application to expand site 1039 should be denied because open net pen salmon aquaculture is known to cause harm to wild salmon. It does not make any sense to work on restoring habitat for wild salmon, as our government and First Nations are doing, and at the same time allow open net pen salmon farms.

Ronald Neufeld
[redacted]
Louis Head, NS
[redacted]

[redacted]

Christine MacWilliams - Victoria Beach site visit; case #7093-12

From: Christine MacWilliams
To: Hawkins, Leighanne; Nickerson, Jeff
Date: 18/07/2012 3:43 PM
Subject: Victoria Beach site visit; case #7093-12
CC: Cusack, Roland R

Summary of sample collection at Victoria Beach site today (2 days since last dive):

pen 1: 31 morts - 1 sample
pen 2: 18 morts - 5 samples
pen 3: 10 morts - 2 samples
pen 4: 21 morts - 3 samples
pen 5: 13 morts - 0
pen 6: 632 morts - 11 samples
pen 7: 242 morts - 7 samples

For pens 6 + 7 - fresh carcasses opened on site had signs of from nonspecific signs like popeye and swollen kidneys to severe kidney granulomas). Other: fecal casts, corneal opacity, periorbital hemorrhages, mild ventral skin lesions and fin erosion...

Crew was terrific; supplementing dive samples with perimeter search, dip netted moribund fish and maintaining good cheer despite retired couple on shore observing/(filming?) all activities.

Good process for mort collections, with carcasses delivered to totes with minimized risk of deck contamination. Judicious use of iodophor disinfectant.

Plan to necropsy tomorrow; with virology samples from pen 2 accompanying molecular samples to RPC (and a request to prioritize this submission).

Cheers,
Chris

Added Caligus common: none to trace of ten per fish. @

SEA LICE

NOVA SCOTIA

Veterinary Services Form

Dept of Fisheries and Aquaculture
P.O. Box 550, 65 River Rd
Truro, NS, B2N 5E3

Farm Name	Cookes - Victoria Beach	Case	14 - 7005
Contact	Todd Mosher	Date	Jan. 21, 2014
Phone	(902) 245 - 8517	Address	

Species	Atl. salmon		Holding Unit Type	100 m cages	
Unit Volume			Flow Rate		
# Fish per Unit	Avg - 22-23,000		Total Weight	~ 300,000 on site.	
Average Wt. Fish	~ 10 lbs		Density		
Water Source	Sea water				
Temperature	4.2°C	Oxygen	9 mg/L	Salinity	
Ammonia		pH		Other	
Vaccine Type			Company		Date

Current Medication(s)		Previous Medication(s)	Oxytetracycline in Nov. 2013 for BKD.

Feed Type		Feed Company	
Feed Size		Feed Rate (%BW/Day)	~ 200 kg /day

Comments:

'x' Hydro activity on the Annapolis River ~ 2 weeks ago (reducing the reservoir thawed water) caused slush ice and ice to surround the cages at the east end of the site. Fish in cages 7 & 13 had increased mortality after this event. R/O's : Suffocation/trauma. (5000-6000 mort.)
- Mortalities have since reduced to normal levels.
Fish are to be harvested in Spring (~Apr: 1)

WEST ① ② ③ ④ ⑤ * ⑥ EAST ⑦*
⑧ ⑨ ⑩ ⑪ ⑫ ⑬
* ⑪ ⑫ ⑬

Work was being done on the rigging and I was unable to sample from here.

* Cage 7 - 6 < 5 slow, 1 sluggish
Cage 6 - 2 - slow
Cage 11 - 3 - slow

~ 5-6 Adult lice per fish.

Necropsy	n = 11	Bacteriology	n=11 Kidney BA, TSA, SKDM	Mycology	
Drug Sensitivity		Histopathology		Parasitology	
Virology	n=11 (4 pools archived)	Blood Chemistry		Hematology	
Water Quality		BKD IFATs	n = 11	Gram Stain	
RT-PCR	ISA x 2 (1 archived)	ISA IFATs		Archive	
Other					
Other					

Date	Jan 21, 2014	Veterinarian	[signature]

1/5

NOVA SCOTIA

Veterinary Services Form - Marine

Dept of Fisheries and Aquaculture
P.O. Box 550, 65 River Rd
Truro, NS, B2N 5E3

Firm Name	Kelly Cove Salmon	Case	15-7018
Contact	Jeff Nickerson / Todd Mosher	Date	Feb. 24, 2015
Client #	202	Site Name	Victoria Beach
Lease #	1040	Species	Atl. salmon

Total # Fish	was ~350,000	# Fish per Unit	was ~30,000
Average Wt. Fish	~1.5 kg	Holding Unit Type	13x100m sea cages
Density		Year Class	Spring 2014 entry

Temperature (surface)		5m	0.1 - 0.5°C	10m		15m
Oxygen	~12 mg/L		Salinity			
Algal Bloom	Yes/No		Wind Speed	20-25 knots NW		
Last Mortality Dive	Yesterday (Seining)		Weather	Overcast (-20°C) -35°C windchill		
Divers (names)	Nick, Willy		Expected Harvest Date			

Current Medication(s)	/	Previous Medication(s)	Tribrissen - Moritella Viscosa Ivermectin - Sea Lice
Chief Complaint(s)	Increased Mortality - Suspect superchill event.		

Feed Type		Feed Company	
Feed Size		Feed Rate (%BW/Day)	

Cage #'s	Morts	Samples	
1			
2			
3			
4			
5			
6			
7			
8			
* 9	—	—	Ø
10			
* 11	—	—	Ø
12			
13			

No Moribunds/fresh deads to be collected

Comments:

N
W ① ② ③ ④ ⑤ ⑥ ⑦ E
⑧ ⑨ ⑩ ⑪ ⑫ ⑬
* *
S

* = Cages close

Dive start: ~10:00hrs. Dive was called at 10:28 hrs. due to extreme cold air & water temps.

Necropsy		Bacteriology		Mycology	
Drug Sensitivity		Histopathology		Parasitology	
Virology		Blood Chemistry		Chematology	
Water Quality		BKD IFATs		Gram Stain	
RT-PCR		ISA IFATs		Archive	
Other					
Other					

No samples to be collected. Weather too cold.

Date	Feb. 25, 2015	Veterinarian	A. Sgro

NOVA SCOTIA

Veterinary Services Form - Marine

Dept of Fisheries and Aquaculture
P.O. Box 550, 65 River Rd
Truro, NS, B2N 5E3

Farm Name	KCS - Cookes	Case	15-7006
Contact	Todd Mosher (Jeff Nickerson)	Date	Jan. 22, 2015
Client #	202	Site Name	Victoria Beach
Lease #		Species	Atl. salmon

Total # Fish	385,747	# Fish per Unit	~30,000
Average Wt. Fish		Holding Unit Type	Sea cages (13 x 100m)
Density		Year Class	Spring 2014

Temperature (surface)	5m	4-4.5°C	10m		15m
Oxygen		Salinity			
Algal Bloom	Yes/No	Wind Speed	8 knots NE		
Last Mortality Dive	2 days previous	Weather	-6°C, overcast		
Divers (names)	Nick, Willy, Mike	Expected Harvest Date			

Current Medication(s)		Previous Medication(s)	
Chief Complaint(s)	slight increase in mortality in #8, 2, 1, 5 → suspect seal predation.		

Feed Type		Feed Company	
Feed Size		Feed Rate (%BW/Day)	Feeding once / day.

Cage	#'s	Morts	Samples	Comments:
1	30,450	50	2 - seal damage	- Majority of morts were just the heads, seals had fed on them.
2	29,526	3	∅	
3	30,071	3	∅	- of those morts with a body, the majority had ulcerative skin lesions.
4	25,619	∅	∅	
5	29,977	99	∅ - Seal damage Call heads	
6	30,408	23	2	- Majority of eyes of morts had cataracts (post mortem change?)
7	28,547	7	2 - seal damage ∅	
8	30,695	3	∅	
9	31,252	2	∅	- 3 seals observed during dive.
10	29,773	2	1 - ½ damage - seals.	
11	31,378	12	∅	
12	29,960	12	∅	
13	28,091	43	4 - seals. → n=2(F#2,9) - BA	

Necropsy	n=9	Bacteriology	n=9 (BA/TSA/SKDM)	Mycology	
Drug Sensitivity		Histopathology		Parasitology	
Virology	n=9 (2 pools) archived	Blood Chemistry		Hematology	
Water Quality		BKD IFATs	n=9	Gram Stain	
BA RT-PCR	n=9 x2 (Kyc archived)	ISA IFATs		Archive	
Other	n=9 kidney in whirlpaks - archived				
Other					

Date	Jan. 23, 2015	Veterinarian	J. Sych

Healthy Bays Network
c/o 202 Cloverville Rd
Antigonish, NS B2G 2M8

25 April 2021

Nova Scotia Aquaculture Review Board
PO Box 2223, Halifax, NS B3J 3C4

HEARING REGARDING A BOUNDARY AMENDMENT TO AQ#1039, RATTLING BEACH

References: A. Findings and Decision – Renewal Application for Kelly Cove Salmon Ltd. for AQ#1039 dated 7/11/16.
B. Municipality of the District of Digby, Orderly and Peaceful Conduct By-Law dated 28 October, 2004
C. nsarb_2021-001_report_on_consultation_0 Undated and Unsigned
D. nsarb_2021-001_application_package, Undated and Unsigned
E. nsarb_2021-001_report_on_performance_review_0 Undated and Unsigned

Dear Members:

Thank you for the Decision document dated 24 March, 2021 regarding our application for intervenor status. In response to your suggestion in that letter, please accept this document as a written submission to the Hearing in the matter regarding Site 1039, Rattling Beach. Healthy Bays Network appreciates the opportunity to provide input and acknowledges the increased transparency occasioned by the Aquaculture Review Board process.

During one of our visits to the Rattling Beach area, we spoke to several local residents about the site. They claimed that there was no noise, no smell, therefore, no problem. After a slight pause, however, one of them said "but maybe we just don't know anything different because it has been here for so long". The Healthy Bays Network believes that an independent and external perspective can be valuable in revealing and assessing problems that may be overlooked or underestimated.

In our submission, we have chosen to rely exclusively on the information that has been released to the public regarding site 1039. As such, we assume that it meets all of the criteria for admissibility and consideration as you make your decision.

Item # 1: Legislation and Regulations – Site 1039 Noise
Aquaculture Licence and Lease Regulations Factor 3(e)

Reference A is the most recent site approval document from the Aquaculture Administrator. As stated in this decision, "instances of complaints [are] on file pertaining to noise from the operation of the site". The Aquaculture Administrator addressed these

complaints by following a methodology that has been in use for at least six years. It goes like this:

a. citizens raise a concern or complaint,

b. the concern or complaint is acknowledged by the Aquaculture Administrator who then cites a regulation that governs the complaint.

In the records that have been reviewed, there have been no Conditions attached to any of the renewals that require the proponent to take action on complaints and concerns such as this. In the case of Site 1039, the Farm Management Plan (FMP) section regarding noise is not available to the general public. The public should have access to the specific regulations and measures that will be implemented by the proponent at site 1039 to address noise complaints by private citizens.

REQUEST: That the Aquaculture Review Board (ARB) attach a Condition that the Noise portion of the FMP for site 1039 be releasable to the public.

Item # 2: Legislation and Regulations – Site 1039 Noise

Aquaculture Licence and Lease Regulations Factor 3(e)

At reference B, no situations are described which permit enforcement to protect citizens from excessive noise emanating from Site 1039. In fact, legislation at all levels is silent on how citizens are protected from this circumstance. Federal law addresses fish and wildlife. Provincial law is silent.

The FMP must have a process in the noise section that ensures that the proponent will work with the relevant authorities (the Municipality, NS Environment, NSDFA, DFO, etc.) to ensure the site is compliant with noise regulations and that complaints can be investigated and addressed. It is our understanding that this is how noise issues are often handled for terrestrial developments such as wind turbines and other industrial developments. Noise data on existing operations were not provided by the company to justify their claims that noise emissions are not problematic. The proponent should have to justify their claims on no impact.

REQUEST: That the ARB attach a Condition that the proponent provides to the Municipality of the District of Digby or other appropriate authority, a process to effectively address Site AQ#1039 noise complaints made by citizens.

Item # 3: Equipment and Culture of Fish outside of Site 1039 Approved Lease Boundaries
Aquaculture Licence and Lease Regulations Factors 3(a), (c), (d), (e) and (f)

Proper regulatory approvals were not obtained when the operator expanded beyond the approved lease boundaries. Notwithstanding the NS Environment pronouncement that they would grant "compliance" to this site - the law is clear. In Section 44 of the Fisheries and Coastal Resources Act, it states that "No person shall carry on aquaculture on Crown land without an aquaculture license and an aquaculture lease". This extends to equipment, which is clearly on Crown land not covered by the approved lease.

How did the operator expand these operations without consequence in an area of busy navigation involving an inter-provincial ferry and a substantial and active fishing fleet? How was an expansion of more than double the area of the approved lease boundaries allowed to persist without consequence? Why did Transport Canada, Navigation Protection Program approve the expansion after it had been done? How do you credibly assess potential environmental impacts to an area that has already been impacted due to a boundary amendment proposal that has already been implemented?

Attached at Annex A are a series of satellite images and data which demonstrate the proponent has had equipment and has cultivated fish outside of the lease boundaries since at least 2009. This underlines the ineffectiveness or unwillingness of Government to enforce laws. The proponent is not blameless either. Actions like this should not be rewarded by sweeping at least 12 years of violations under the carpet by way of approvals facilitated by weak governance.

Further, it is not reasonable for the ARB to be used to make an illegal act, legal. This action would set a precedent where other operators may expand their sites illegally and operate above authorized capacity as long as they eventually apply for a boundary amendment. This would have an effect on proper evaluation of impacts and consideration of the factors that must be considered by the ARB under aquaculture regulations.

REQUEST: That the ARB denies the application until the site 1039 alleged violations of the Fisheries and Coastal Resources Act are resolved.

Item # 4: Complete Lack of Protections for Local Users and Public Waters within and Surrounding Site AQ#1039
Aquaculture Licence and Lease Regulations Factors 3(a), (c), (d), (e), (f) and (g)

At reference C, The Department of Fisheries and Oceans (DFO) repeatedly states that its threshold for risk in the protection of fish and fish habitat is population level impacts. This is profound because it is now clear that DFO is not willing to provide any protections to local users, aquatic life or the waters in and around the proposed lease. Even if the entire area of influence of site 1039 were to become a dead zone with no marine life due to operation of the

site, it would not achieve the population level threshold set by DFO. This confirms that any consultation with DFO on this site and any future sites will likely be an utter waste of time and effort. An assessment framework must be implemented that accounts for and protects from, the local impacts described throughout the public documentation relevant to this Hearing.

Furthermore, DFO's advice and risk management approach is in violation of its own policy. As per DFO policy, all fisheries are now to be managed under the precautionary principle. Since Atlantic Salmon are classified as a fishery (see https://www.dfo-mpo.gc.ca/fisheries-peches/recreational-recreative/maritimes/diadrom-eng.html#salmon), then the intent of the paper at the following link applies https://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/precaution-eng.htm . This means that DFO is obligated to manage wild Atlantic Salmon and other species in such a manner that developments must prove that they will not cause a negative impact.

There is ample evidence to suggest that open-net pen fish farms do cause negative impacts to wild Atlantic Salmon and other species as well. Reports from DFO in 1996 (Stock Status report) found that Atlantic Salmon recovery efforts in Annapolis Basin were even then being impacted by aquaculture, as 1 in 4 of the wild fish collected for a stocking program were found to be an aquaculture escapee. This clearly demonstrates a local impact.

The Atlantic Salmon population (Southern Uplands), to which the Annapolis and Bear River sub-populations belong, is already experiencing a population level impact. This population was assessed in 2011 by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as endangered and is currently being considered by DFO to be listed as an endangered population under the Species At Risk Act (SARA). Stock Status and Recovery Potential Assessment documents prepared by DFO as part of the SARA listing process identify aquaculture as a threat to the population and its recovery. Given the state of the population and that aquaculture operations are a contributing factor to that decline, then how can DFO claim there is no population level effect? If the basis of their claim is that site 1039 is not the sole cause of the population level effect then that advice should be disregarded as no one action can ever have a population level impact.

Given the probability of impact upon wild catch fisheries and status of both the local sub-populations and population of Atlantic Salmon, DFO should be advising that the application for site 1039 needs to be further developed.

REQUEST: That the ARB deny the site 1039 application.

Item # 5: Lack of Specific and Local Data to Support Site 1039 Environmental Impact Assessment

Aquaculture Licence and Lease Regulations Factors 3(a), (c), (d), (e), (f) and (g)

Reference C is also rife with examples cited by DFO where insufficient data was available to reliably comment on impacts of the proposal. Because the expansion was done without the appropriate approvals, there is no baseline information on which to base a precise assessment.

Therefore, DFO defaults to their threshold of risk mentioned above in Item # 4. Lack of information should not support a decision in favour of the proponent.

One example of this is local Atlantic Salmon. Although the populations in the area are critically low, they are still present. A DFO stock assessment report in 2008 confirmed they are present. Recent anecdotal evidence supports this and DFO has never declared the local populations extirpated. Since the species is still present, then under the Fisheries Act, DFO is obligated to see that it is managed in a manner such that the Atlantic Salmon populations persist at healthy levels, imposing management measures to ensure rebuilding and recovery of the stocks if it drops below these levels.

This is relevant because authority given to the province by the federal government to manage and issue aquaculture leases and licences through a Memorandum of Understanding stems from the Fisheries Act. This Act takes precedence and must be considered. Why DFO's advice on Atlantic Salmon does not reflect this need is a question that should be addressed during the hearing. Impacts to wild Salmon is one of the factors that the ARB must consider in rendering a decision.

REQUEST: That the ARB deny the site 1039 application.

<u>Item # 6</u>: Uncertainty about Contents of the Farm Management Plan
Aquaculture Licence and Lease Regulations Factors 3(a), (c), (d) and (g)

At reference C, pp.33, at the bottom of the page, DFO states: "To prevent provincial approval of the application for an aquaculture license from leading to contravention of sections 34.4, 35 and 36 of the Fisheries Act, the AAR or of SARA, DFO and NSDFA should discuss aspects of the Farm Management Plan that fall under the mandate of DFO." This suggests a lack of openness on the part of NSDFA for not sharing the FMP in advance. More worrisome, it shows that DFO is relying on self regulation by industry or provincial regulations instead of exercising federal authority.

Without effective input from DFO on matters within their mandate, the ARB cannot fully weigh the evidence on the factors that they must consider. Before approval of this proposal is granted, the FMP should be released to intervenors and the ARB to ensure that federal legislation and regulations are recognized and federal authority is preserved.

REQUEST: Release of the site 1039 FMP to intervenors and the ARB so that potential conflicts with federal laws are avoided and federal authority is preserved.

<u>Item # 7</u>: Uncertainty about Cumulative Effects and the Contributions of Site 1039
Aquaculture Licence and Lease Regulations Factors 3(a), (c), (d), (g) and (h)

At pp. 112 to 115 of reference C, several Issues in the table refer to uncertainties about the cumulative effects within the Annapolis Basin. In Issue # 14, NSDFA implies that cumulative effects need only be based on two finfish sites rather than the three that are present. They justify this by noting one site is not presently in production. With a lease at site 1039 that does not expire until 2036, this is not a reasonable or responsible position for the regulator to take because the third site could resume production at any time.

In Issues 17 and 21, NSDFA implies that there is no evidence that in-feed drugs or pesticides will harm other organisms and that biodiversity reduction only occurs if the daily deposition rate exceeds five grams of carbon per square metre per day. DFO disagrees with these presumptions and in so doing, creates uncertainty. These are important issues that directly impact our ability to assess cumulative impacts. Particularly, in Digby Gut where all of these uncertainties multiply since it is the only channel connecting the Basin with the Bay of Fundy.

At pp. 33 of reference C, DFO states: ""detrimental increases in BOD [Biochemical Oxygen Demand] could result from cumulative impact of expansion of finfish aquaculture combined with excessive nutrient inputs from sewage treatment and agricultural runoff." At pp. 55, DFO states: ""the potential for cumulative exposures to pesticides has not been considered in this document in any detail."

As explained in Item # 4 of this submission, the DFO threshold for taking action is very high. So high, that even in an enclosed body of water such as the Annapolis Basin, little to no effort has been put into determining whether local area protections are deserved from any cumulative effects. The ARB should recognize that more justification is required before dismissing the concern of cumulative effects.

REQUEST: That the ARB deny the site 1039 application.

<u>Item # 8</u>: Uncertainty about Cumulative Effects and the Contributions of Site 1039
Aquaculture Licence and Lease Regulations Factors 3(a), (c), (d), (g) and (h)

Pages 52 to 57 of reference C detail all of the work and assumptions relating to cumulative effects. Related to this work, on page 51, second bullet, DFO acknowledges that spatial and seasonal variability in the currents were not accounted for at site 1039 and if they were, then the domain of the predicted exposure zones would increase. On page 52, DFO states that even without this increase, the pelagic zones of influence from aquaculture sites in the Basin would more likely overlap.

At reference E, page 3, NSDFA endorses the responsible environmental management of site 1039 through the proponents' participation and performance under the Environmental Monitoring Program (EMP). That is reassuring but unless readings exceed a threshold, the EMP only provides information from within the lease boundaries except for reference samples which are analyzed for comparison. Therefore, no routine test assessments are required to be performed outside of the lease boundaries. Further, this testing is conducted only once per year, at a time chosen by the operator. The location, frequency and timing of the EMP assessment leave significant gaps in our understanding of the far-field effects of site 1039.

Assessment of the deposition of matter within the lease boundaries does provide an analytical trip wire to alert regulators to problems at the site. It does nothing, however, to describe the reach of those particles that do not behave according to the model. Starting at page 285 of reference D, the contractor describes the *Aquamodel* program used to calculate deposition at site 1039. In Section 1.2.1 on page 286, it shows that the 2-D model was used. There is a 3-D model available that is suited for bay-wide scales and can include multiple farm inputs. On page 291, the contractor describes detailed analyses that can be delivered by *Aquamodel* but laments that under the Aquaculture Activity Regulations, only depositional contours are required. A bit of a sales pitch to be sure but it underlines the fact that tools have evolved and regulators have failed to embrace these advances.

The ARB must recognize that better tools are available to assess cumulative effects and that it is desirable to use these capabilities to support enforcement of laws and regulations to preserve fish and fish habitat in the case of site 1039.

REQUEST: That the ARB deny the site 1039 application.

Item # 9: Effect on Wild Salmon
Aquaculture Licence and Lease Regulations Factor 3(g)

The DFO assessment concluded that the Annapolis Basin is not Critical Habitat for the Inner Bay of Fundy population of Atlantic Salmon, despite tracking research by DFO presented to the Inner Bay of Fundy Salmon Recovery Team that suggests otherwise.

Atlantic Salmon have been identified historically in a number of tributaries flowing into the Annapolis Basin: Annapolis, Hill, Moose and Bear Rivers and Acadian Brook. Further the Bear River First Nation has undertaken wild Atlantic Salmon recovery efforts in the past ("Mi'kmaw and the Atlantic Salmon (*Salmo Salar*)", June 2013, Mi'kma'ki All Points Services). Some of these rivers are between 4 to 6 kilometers from the Rattling Beach site.

It should also be noted that the Nova Scotia Salmon Association in collaboration with Clean Annapolis River Project (CARP) and with DFO and Oceans North funding, is undertaking a salmon recovery project entitled, Watershed Assessment Towards Ecosystem Recovery for Aquatic Species at Risk (W.A.T.E.R). This project is using eDNA (environmental DNA) to detect

the presence of Atlantic Salmon in a number of watersheds across Nova Scotia. This includes the Annapolis River watershed. The lack of observed fish may not be indicative of their absence in a watershed. This research, based on new technology, is in aid of future recovery programs for Atlantic salmon, Atlantic whitefish, Atlantic sturgeon, American eels and brook floaters, all threatened, endangered or of special concern. A similar project for Atlantic salmon carried out on the Eastern Shore has concluded that Atlantic Salmon are present in coastal bays in greater numbers than previously documented.

Lacking a firm assessment of this factor, significant risk to remaining wild salmon may exist.

REQUEST: That the ARB deny the application.

To conclude, this first finfish Adjudicative Amendment Hearing has provided a wealth of information regarding the approach to regulation of this site and the industry in general. As the ARB is an independent body, we trust that this input will inform and influence deliberations regarding the site 1039 proposal.

The Healthy Bays Network is a growing, informed and interested party in this Hearing and future proceedings. We look forward to continued dialogue.

Sincerely;

2021-04-26

X Derek Purcell

Derek Purcell
Director

for the Healthy Bays Network
www.healthybays.ca
healthybaysnetwork@gmail.com

Attachments: Pages 9 to 16

Annex A – Satellite Imagery of Lease Violations at Site AQ#1039

Annex A
to HBN Submission
dated 25 April, 2021

SATELLITE IMAGERY OF LEASE VIOLATIONS AT SITE AQ#1039 – 2009 TO 2013

Year	Date	Lease #	Finfish/Shellfish/Reference	NSDFA ID	Latitude	Longitude	Mean Sulphide (µM)
2009	08/18/2009	1039	Fin	ANB02	44.6554	-65.7558	831
2009	08/18/2009	1039	Fin	ANB03	44.6537	-65.7552	390
2009	08/18/2009	1039	Fin	ANB04	44.6527	-65.7558	520

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SATELLITE IMAGERY OF LEASE VIOLATIONS AT SITE AQ#1039 – 2014

2014	08/21/2014	1039	Fin	ANB37	44.65226	-65.755	47
2014	08/21/2014	1039	Fin	ANB70	44.65643	-65.7555	498
2014	08/21/2014	1039	Fin	ANB71	44.65543	-65.7556	191
2014	08/21/2014	1039	Fin	ANB72	44.65497	-65.75582	178
2014	08/21/2014	1039	Fin	ANB73	44.65498	-65.75563	58
2014	08/21/2014	1039	Fin	ANB74	44.65458	-65.75575	282
2014	08/21/2014	1039	Fin	ANB75	44.65453	-65.75558	117
2014	08/21/2014	1039	Fin	ANB76	44.65408	-65.75555	124
2014	08/21/2014	1039	Fin	ANB77	44.65327	-65.75548	121
2014	08/21/2014 12:00:00 AM	1039	Ref	ANB01	44.65898	-65.75585	291
2014	08/21/2014 12:00:00 AM	1039	Ref	ANB05	44.50285	-64.05187	155

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SATELLITE IMAGERY OF LEASE VIOLATIONS AT SITE AQ#1039 – 2015

Year	Date	Lease #	Finfish/Ref	NSDFA ID	Latitude	Longitude	Mean Sulphide (µM)
2015	08/26/2015	1039	Fin	ANB04	44.6526	-65.756	1,140
2015	08/26/2015	1039	Fin	ANB41	44.6524	-65.755	771
2015	08/26/2015	1039	Fin	ANB73	44.655	-65.756	780
2015	08/26/2015	1039	Fin	ANB74	44.6546	-65.756	999
2015	08/26/2015	1039	Fin	ANB83	44.6565	-65.756	799
2015	08/26/2015	1039	Fin	ANB84	44.6551	-65.756	845
2015	08/26/2015	1039	Fin	ANB85	44.6544	-65.755	1,423
2015	08/26/2015	1039	Fin	ANB86	44.6532	-65.755	957
2015	08/26/2015	1039	Fin	ANB87	44.6524	-65.756	1,393
2015	08/26/2015 12:00:00 AM	1039	Ref	ANB05	44.6507	-65.755	55
2015	08/26/2015 12:00:00 AM	1039	Ref	ANB06	44.659	-65.756	522

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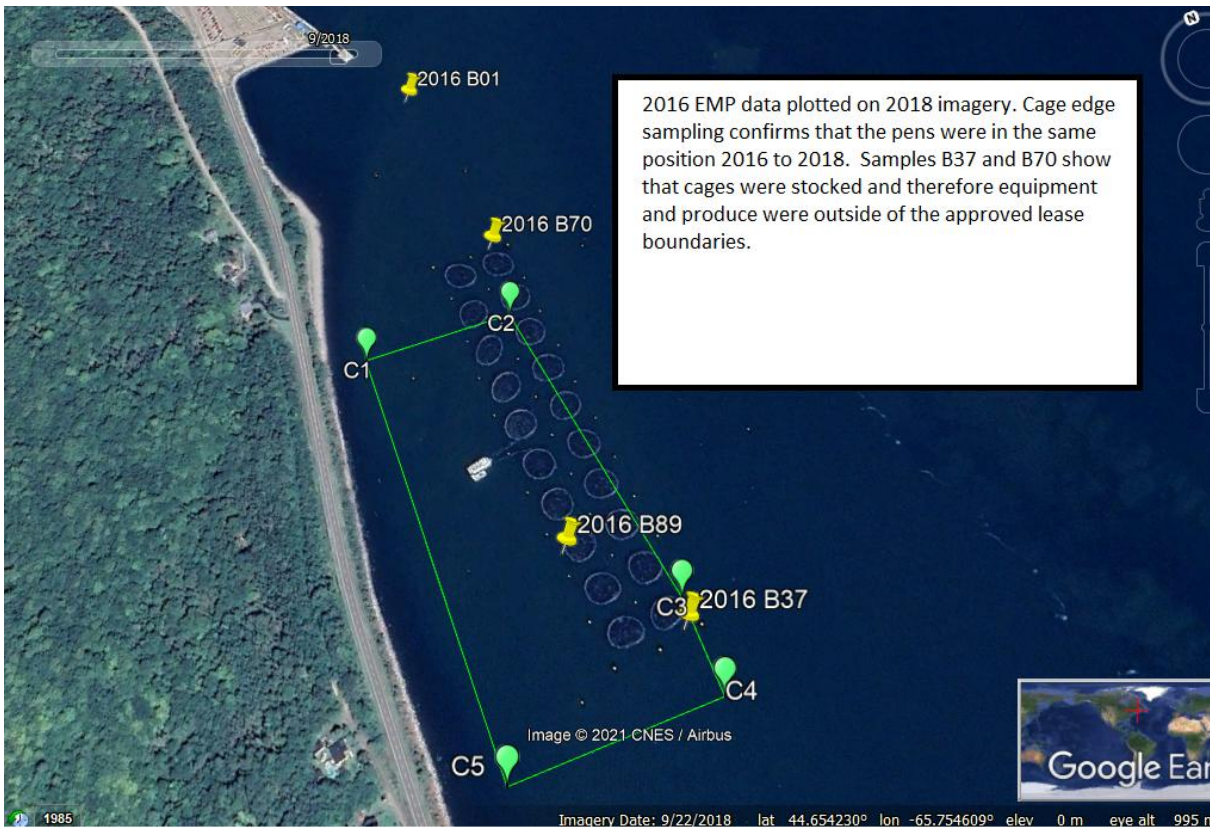
SATELLITE IMAGERY OF LEASE VIOLATIONS AT SITE AQ#1039 – 2016



Year	Date	Lease #	Finfish	NSDFA ID	Latitude	Longitude	Mean Sulphide (µM)
2016	08/17/2016	1039	Fin	ANB37	44.65217	-65.75503	62
2016	08/17/2016	1039	Fin	ANB83	44.6565	-65.75617	240
2016	08/17/2016	1039	Fin	ANB90	44.6542	-65.75505	202
2016	08/17/2016	1039	Fin	ANB91	44.65583	-65.75632	273
2016	08/17/2016	1039	Fin	ANB89	44.65317	-65.75606	5,287
2016	08/17/2016	1039	Fin	ANB88	44.65213	-65.75566	103
2016	08/17/2016	1039	Fin	ANB70	44.65649	-65.75553	
2016	08/17/2016 12:00:00 AM	1039	Ref	ANB01	44.65896	-65.75589	281
2016	08/17/2016 12:00:00 AM	1039	Ref	ANB05	44.65063	-65.75545	53

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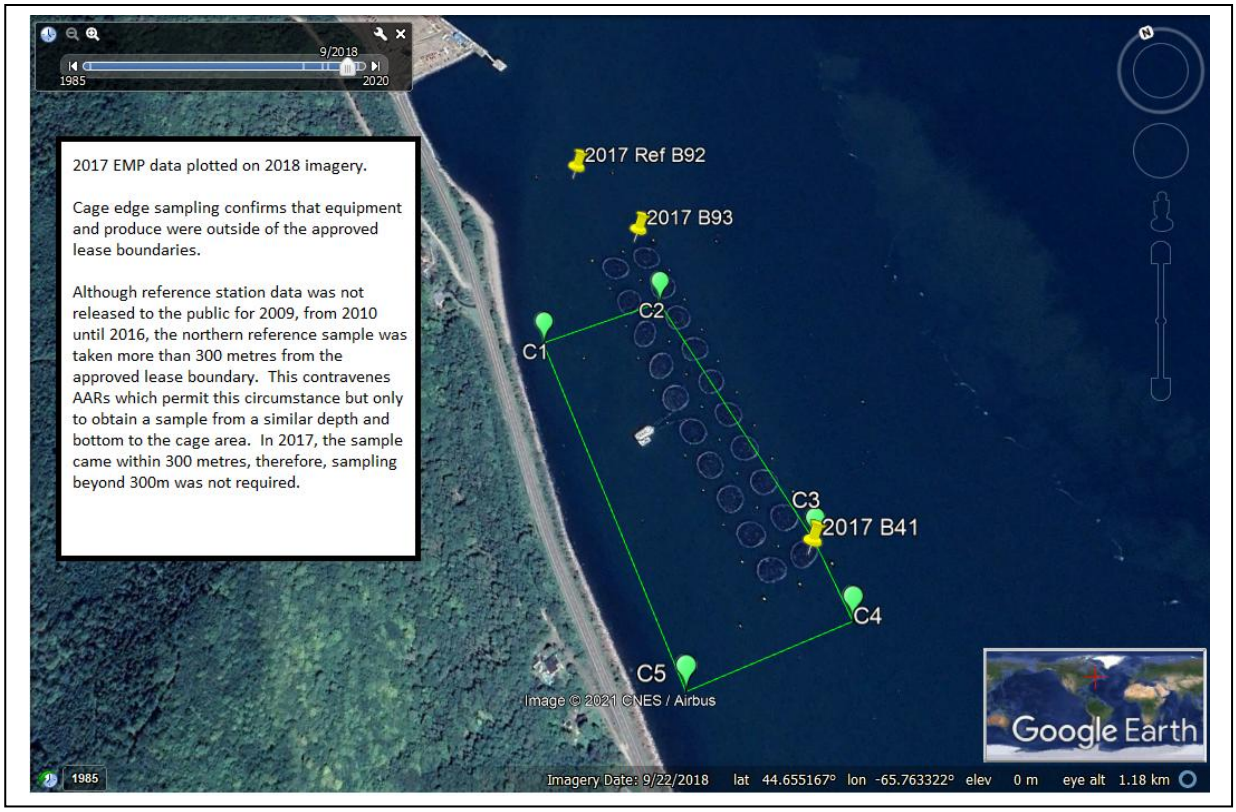
SATELLITE IMAGERY OF LEASE VIOLATIONS AT SITE AQ#1039 – 2017



Year	Date	Lease #	Finfish/Ref	NSDFA ID	Latitude	Longitude	Mean Sulphide (µM)
2017	09/12/2017	1039	Fin	ANB40	44.65488	-65.7562	1,487
2017	09/12/2017	1039	Fin	ANB41	44.65234	-65.7551	4,350
2017	09/12/2017	1039	Fin	ANB83	44.6565	-65.7561	660
2017	09/12/2017	1039	Fin	ANB86	44.65317	-65.7551	622
2017	09/12/2017	1039	Fin	ANB91	44.65574	-65.7563	681
2017	09/12/2017	1039	Fin	ANB89	44.65311	-65.7561	445
2017	09/12/2017	1039	Fin	ANB94	44.65226	-65.7558	4,790
2017	09/12/2017	1039	Fin	ANB93	44.65654	-65.7556	878
2017	09/12/2017 12:00:00 AM	1039	Ref	ANB05	44.65066	-65.7554	201
2017	09/12/2017 12:00:00 AM	1039	Ref	ANB92	44.65764	-65.7561	573

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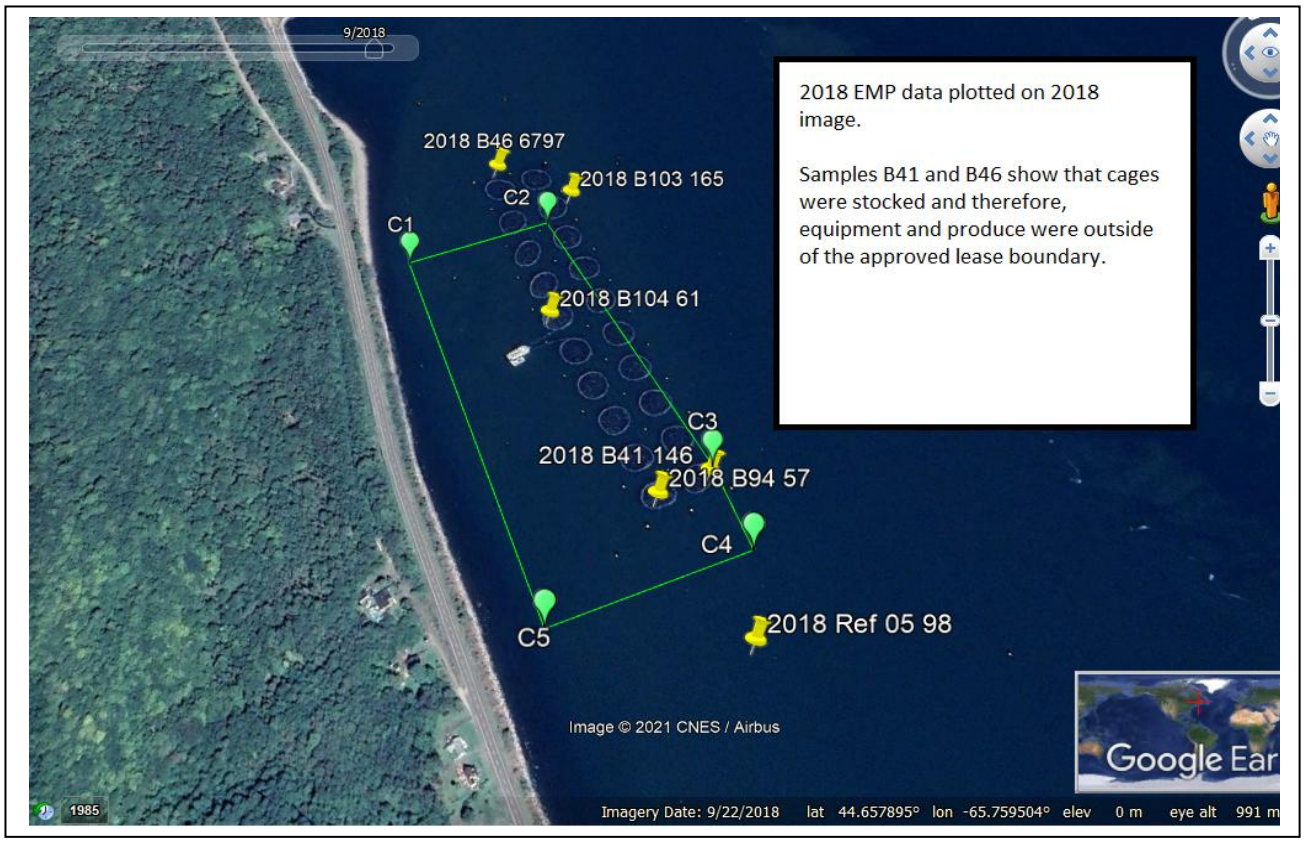
SATELLITE IMAGERY OF LEASE VIOLATIONS AT SITE AQ#1039 – 2018



Year	Date	Lease #	Finfish/Ref	NSDFA ID	Latitude	Longitude	Mean Sulphide (µM)
2018	07/24/2018 12:00:00 AM	1039	Fin	ANB41	44.65228	-65.75508	146
2018	**07/24/2018 12:00:00 AM**	**1039**	**Fin**	**ANB46**	**44.65647**	**-65.75605**	**6,797**
2018	07/24/2018 12:00:00 AM	1039	Fin	ANB94	44.65223	-65.7558	57
2018	07/24/2018 12:00:00 AM	1039	Fin	ANB103	44.65585	-65.75521	165
2018	07/24/2018 12:00:00 AM	1039	Fin	ANB104	44.6545	-65.75617	61
2018	07/24/2018 12:00:00 AM	1039	Ref	ANB05	44.65068	-65.75544	98

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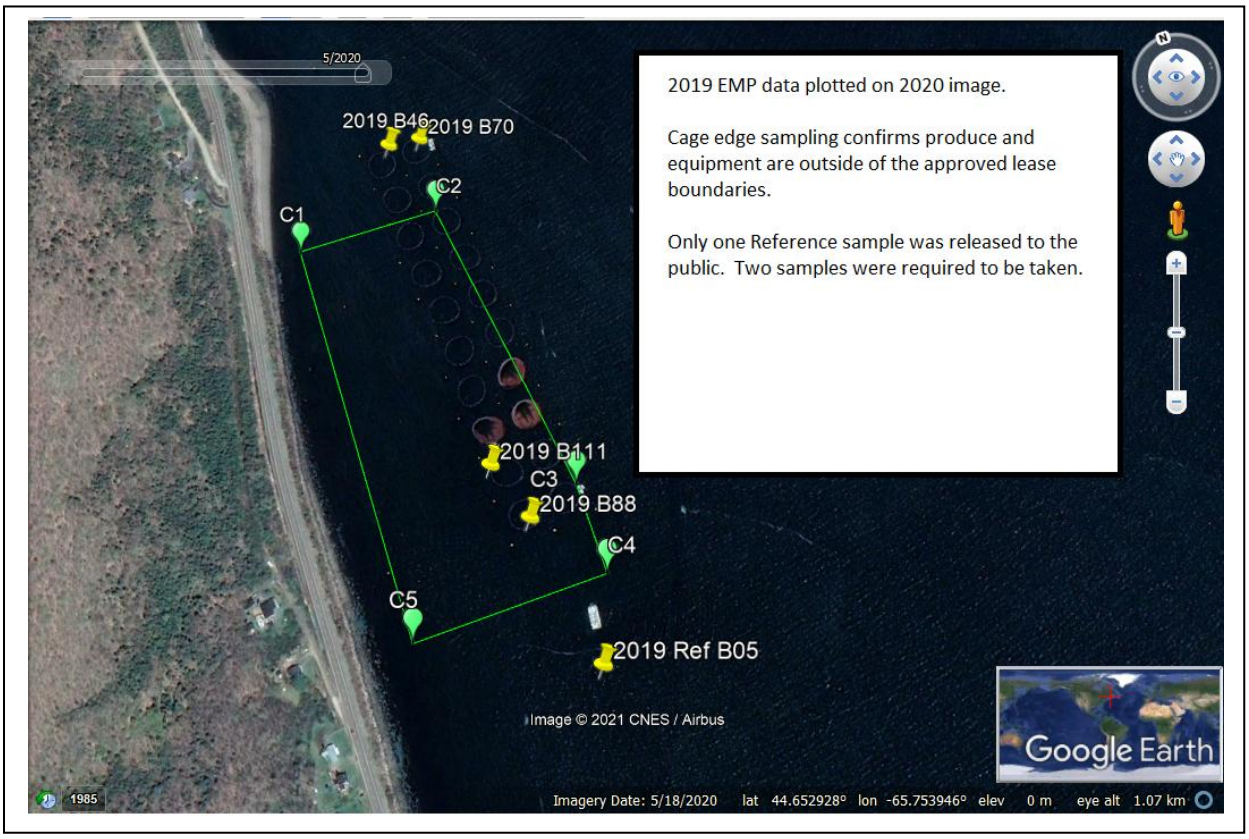
SATELLITE IMAGERY OF LEASE VIOLATIONS AT SITE AQ#1039 – 2019



Year	Date	Lease #	Finfish/Ref	NSDFA ID	Latitude	Longitude	Mean Sulphide (µM)
2019	07/24/2019	1039	Fin	ANB110	44.65276	-65.755	216
2019	07/24/2019	1039	Fin	ANB111	44.65277	-65.756	316
2019	07/24/2019	1039	Fin	ANB37	44.6522	-65.7551	129
2019	07/24/2019	1039	Fin	ANB46	44.65646	-65.7561	84
2019	07/24/2019	1039	Fin	ANB70	44.65643	-65.7556	1,865
2019	07/24/2019	1039	Fin	ANB88	44.65216	-65.7557	206
2019	07/24/2019	1039	Fin	ANB89	44.65325	-65.756	261
2019	07/24/2019 12:00:00 AM	1039	Ref	ANB05	44.65066	-65.7554	33

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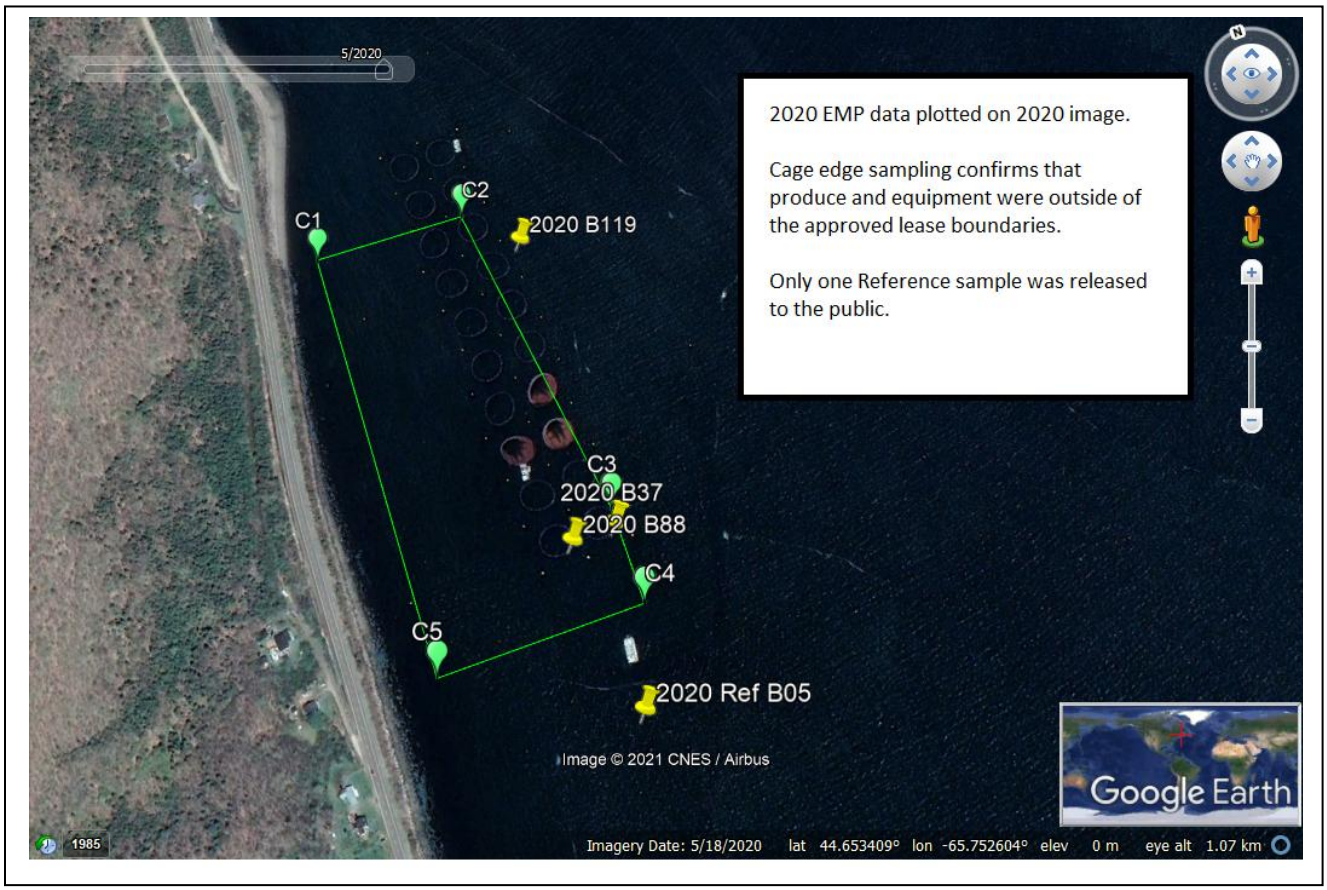
SATELLITE IMAGERY OF LEASE VIOLATIONS AT SITE AQ#1039 – 2020



Year	Date	Lease #	Finfish/Ref	NSDFA ID	Latitude	Longitude	Mean Sulphide (µM)
2020	08/12/2020	1039	Fin	ANB37	44.6522	-65.755	2,687
2020	08/12/2020	1039	Fin	ANB88	44.65217	-65.7556	492
2020	08/12/2020	1039	Fin	ANB119	44.65515	-65.755	218
2020	08/12/2020	1039	Fin	ANB118	44.65282	-65.7548	255
2020	08/12/2020	1039	Fin	ANB115	44.65662	-65.756	297
2020	08/12/2020	1039	Fin	ANB117	44.65414	-65.7559	758
2020	08/12/2020 12:00:00 AM	1039	Ref	ANB05	44.65059	-65.7554	89

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April 25, 2021

Re: Lease expansion proposal for aquaculture site AQ#1039 at Rattling Beach

Dear members of the Aquaculture Review Board,

The following is the Ecology Action Centre's (EAC) written submission regarding the lease expansion applications put forth by Kelly Cove Salmon (KCS) for aquaculture site AQ#1039 at Rattling Beach.

The EAC is Atlantic Canada's oldest and largest non-profit environmental organization. We work locally, nationally and internationally towards protecting marine biodiversity and maintaining sustainable fisheries in support of vibrant coastal communities. The EAC has a long history of advocating for the protection of marine ecosystems from the impacts of open net-pen aquaculture.

We must begin this submission by noting our disappointment in the Aquaculture Review Board (ARB) decision to reject our application for intervention in this hearing. The EAC's province-wide engagement on the key aspects of aquaculture development have facilitated an organizational knowledge and experience relevant for each individual open net-pen salmon aquaculture site in Nova Scotia, including Rattling Beach. We applied for intervenor status in-part because of the ramifications this hearing is likely to have on aquaculture governance in Nova Scotia, as well as the long-term cumulative impacts on the marine environment, wild Atlantic salmon and other species at risk. These issues are a major part of the EAC's ongoing organizational, and membership interests as a regional environmental charity, and they impact Nova Scotians well beyond the Rattling Beach site through the corporatization and privatization of public waters.

In our view, a submission like that which follows is not necessarily easily put together by individual citizens, communities or other local entities near open net-pen aquaculture sites. Such reviews can be timely, costly or out-of-reach for many who might wish to bring constructive arguments to bear. This is a role that the EAC adopts on behalf of concerned citizens and communities who care deeply about the natural environment in Nova Scotia, but who cannot fully participate in processes like this one due to time or resource constraints. We are grateful for an opportunity to make a written submission in this case, but we sincerely hope the ARB will consider approving the EAC for intervenor status at future hearings. If allowed full intervention, we will expand on the information presented here and contribute to a healthy dialogue between aquaculture proponents, provincial

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administrators, local communities, and environmental and public interest groups like ours during aquaculture decision-making processes throughout the province.

In this case, we are troubled by the prospective approval for lease expansion at AQ#1039. For the purposes of this submission, our concerns are divided into two primary categories: (1) procedural and regulatory deficiencies leading to the expansion proposal now at hand, reflective of the ARB "factor" for consideration (a) *the optimum use of marine resources*; and (2) the ecological risks associated with expanded aquaculture operations at the site. The latter section focuses on three additional factors, namely: (c) *fishery activities in the public waters surrounding the proposed aquacultural operation*; (d) *the oceanographic and biophysical characteristics of the public waters surrounding the proposed aquacultural operation*; and (g) *the sustainability of wild salmon*. While KCS has stated publicly that they do not intend to expand production at Rattling Beach at this time, we have developed this submission in recognition of this possible eventuality, based on the proponent's known interest in the growth of production throughout Nova Scotia. We encourage the ARB to use tools available through conditions of lease and licence to ensure that the proponent cannot grow production on expanded leasing territory without another ARB hearing.

Factor A: The optimum use of marine resources

Procedural and regulatory issues related to operation and expansion proposal at AQ#1039

The first factor to be considered by the ARB, the optimum use of marine resources, must necessarily include a consideration of the ability of the Nova Scotia Department of Fisheries and Aquaculture (NSDFA) to ensure compliance of the aquaculture operator with their lease or licence, and the ability and disposition of the operator, in this case KCS, to comply with the conditions of their lease or licence. The EAC submits that, as a minimum, the optimum use of marine resources must mean that the activities that use those marine resources comply with the law. In other words, an aquaculture operation like AQ#1039 that does not comply with the law cannot be an optimum use of marine resources.

As identified in the *Report of the Performance Review of an Aquaculture Operation*, which forms part of the proponent's application package, the NSDFA has identified that the current aquaculture operation at AQ#1039 is operating outside the bounds of its lease site, in contravention of section 55(2)(b) of the *Aquaculture Licence and Lease Regulations*. The EAC is concerned that the hearing for AQ#1039 will be used as a mechanism to legitimize noncompliance at Rattling Beach by ratifying expanded operations already taking place at the lease site without proper regulatory approval.

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We are very troubled by the precedent that will be set for sites operating outside of legal boundaries if the current outstanding regulatory compliance is not addressed prior to the ARB's possible approval of the lease site expansion. In essence, the approval through this hearing would give proponents the green light to operate aquaculture sites outside of their legally approved leases and use the ARB process to circumvent repercussions for noncompliance. The ARB process is not meant to act as a mechanism through which noncompliant aquaculture operations can come back into compliance after the fact. Put another way, the ARB process should only be used for adjudicative amendments for aquaculture leases or licences that are compliant with the law.

Furthermore, the EAC is troubled by the process of inspection and compliance that took place when AQ#1039 was first found to be in noncompliance. Between May of 2014, when a Nova Scotia Environment (NSE) inspection into the proponent's boundary violation took place, and October of 2016, when the proponent was given the choice to come into boundary compliance or apply for a site expansion, operations were allowed to continue uninterrupted for more than two years, according to site information obtained by community members through Nova Scotia's *Freedom of Information and Protection of Privacy Act*. It appears that inspection reports were not dealt with by the department in some cases for upwards of one month after filing, and that follow-up inspections experienced delays of more than a month after scheduling. Finally, when non-compliance was noted during the second inspection at AQ#1039 by inspection officers, it is unclear what if any follow-up took place in the one-year period following, prior to NSE's October 2016 letter calling the proponent into compliance.

The EAC is aware that changes to Nova Scotia's regulatory regime for aquaculture were taking place during this time. However, major delays and inaction of enforcement continued to persist well beyond the implementation of Nova Scotia's new regulations, as it appears the proponent continued its operations for more than four years following NSE's 2016 notice of noncompliance, leading up to the 2021 ARB hearing now set to commence. We urge the ARB to ensure that sites are brought into compliance and kept within legal boundaries before applications are made to the Board, and before lease expansion approvals can be granted.

Recommendation(s): The ARB must consider the multi-year noncompliance of AQ#1039 as part of its assessment of the optimum use of marine resources and reject the proponent's application for lease expansion until such time as proper regulatory enforcement protocols and site re-alignments have taken place.

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Factor C: Fishery activities in the public waters surrounding the proposed aquacultural operation

The ARB's decision over the KCS Rattling Beach proposal could have significant ramifications for the EAC's work protecting species at-risk in Nova Scotian waters. To-date, our organization's work has focused on fish populations currently within the "critical zone" as defined under the federal *Fisheries Act*, some of which could be directly impacted by the lease site. AQ#1039 currently operates in some of the most productive fishing grounds in the Maritimes. Several important commercial fisheries could be put at risk by the impacts of open net-pen aquaculture, including herring, scallops and lobster, among others.[1]

Fisherman surveys conducted in Southwest New Brunswick have reported that scallops are lost, depleted or inedible in some areas where long-term open net-pen aquacultural operations exist.[2] Scallops with thin shells and "black or mildewed matter" inside were reported in the locations where they could still be harvested.[3] Similar concerns have been noted throughout the urchin fishery in the Fundy Isles region, where "diseased, cancerous, mildewed or discoloured" roe, rendered unmarketable, is reported by local divers.[4] Fishermen theorize that the roe is affected by fish feed and by proximity to chemical applications.[5] The continued expansion of open net-pen salmon farming operations in the Annapolis Basin could be devastating to local scallop and urchin fisheries if the same impacts were to occur in the region.

Herring represent another fisheries-related concern, as stocks are severely depleted in the Maritimes region already. In Southwest New Brunswick, weir fishermen near open net-pen sites have theorized that aquaculture operations have added to a suite of cumulative impacts that have reduced the ability of local herring to feed and grow as usual.[6] Reporting from British Columbia has shown herring caught by the tens of thousands as bycatch during harvesting periods at open net-pen salmon farms, including a haul of upwards of 300,000 herring in a single harvest in Dixon Bay.[7] There appears to be very little Atlantic Canadian science available on these topics, which should dictate extreme caution in the context of open net-pen aquaculture expansion. Herring are a keystone species of

[1] Wiber, M. G., Young, S., & Wilson, L. (2012). Impact of Aquaculture on Commercial Fisheries: Fishermen's Local Ecological Knowledge. *Human Ecology*, *40*(1), 29–40. https://doi.org/10.1007/s10745-011-9450-7
[2] *Ibid.*
[3] *Ibid.*
[4] *Ibid.*
[5] *Ibid.*
[6] *Ibid*
[7] Clayoquot Action. (2020, May 6). *Salmon Farms—Herring Farms?* https://www.youtube.com/watch?v=8uZE76V4APg

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incredible importance to both marine ecosystems and wild fisheries in the Bay of Fundy and throughout the Maritimes.

On lobster, independent research efforts conducted in Nova Scotia have shown that active open net-pen operations can affect localized catch rates and reduce the observability of berried females near aquaculture sites.[8] Chemical sea lice lice treatments in other locations have been very harmful to lobster and other crustaceans in regions where more fish farming is taking place.[9] The Atlantic Canada Fish Farmers Association reported that 22.7% of treatments still involved hydrogen peroxide or toxic Salmosan components.[10] The risk that chemical sea lice treatments on salmon farms pose to lobster at various life stages should be of considerable concern to the ARB. DFO notes that chemical dispersants from sea lice treatments are likely to travel anywhere from 400 metres to 14 kilometres, depending on the chemical and depending on oceanographic conditions. To use one example, hydrogen peroxide, used frequently on Atlantic Canadian salmon farms,[11] is expected to travel at toxic concentration from 432 metres to just over 1.4 kilometres from AQ#1039. This distance is more than far enough to impact lobster fishing ground in the Annapolis Basin.

Moreover, considered in a "worst case scenario" during which all three salmon farming sites in the Basin (AQ#1039, AQ#1040 and AQ#1041) are operational and receiving sea lice treatment, such a radius would cover a significant portion of lobster fishing territory in the area. Most chemical treatment types are expected to be particularly harmful to lobster at larval and early life stages.[12] Furthermore, DFO has acknowledged that planktonic lobster larvae are understudied in nearby regions where open net-pen aquaculture sites are present, such as in the St. Mary's Bay near AQ#1353 and AQ#1354,[13] despite the importance of this species to fishing livelihoods in the area. The EAC lacks access to data regarding sea lice and treatment in the Annapolis Basin region specifically.

We note that in-feed bacterial treatments applied at AQ#1039 and AQ#1040 between 2016 and 2018 included Oxytetracycline, which can be consumed by local marine species once it is transported below and outwards from cages through fish waste and uneaten feed.[14] DFO reports on studies showing Oxytetracycline detected at the seafloor anywhere from 16 to 419 days after

[8] Milewski, I., Loucks, R., Fisher, B., Smith, R., McCain, J., & Lotze, H. (2018). Sea-cage aquaculture impacts market and berried lobster (Homarus americanus) catches. *Marine Ecology Progress Series*, *598*, 85–97. https://doi.org/10.3354/meps12623
[9] Aquaculture company on the hook for $500K for pesticide use. (2013, April 26). *CBC News*. Retrieved: URL.
[10] *2020 New Brunswick Annual Sea Lice Management Report*. (2021). Atlantic Canada Fish Farmers Association. Retrieved: URL.
[11] *Ibid.*
[12] DFO. (2020). DFO Maritimes Region Review of Proposed Marine Finfish Aquaculture Boundary Amendment, Rattling Beach, Digby County, Nova Scotia. DFO Can. Sci. Advis. Sec. Sci. Resp. 2020/015.
[13] DFO. 2011. Landings, Lifecycle, and Utilization of Habitat for Lobster in the Vicinity of two Proposed Finfish Aquaculture Sites in St. Mary's Bay, Nova Scotia. DFO Can. Sci. Advis. Sec. Sci. Resp. 2011/002
[14] Leal, J. F., Santos, E. B. H., & Esteves, V. I. (2019). Oxytetracycline in intensive aquaculture: water quality during and after its administration, environmental fate, toxicity and bacterial resistance. *Reviews in Aquaculture*, *11*(4), 1176–1194. https://doi.org/10.1111/raq.12286

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treatment, depending on conditions.[15] More research should be required on the impact of these in-feed treatments on localized commercial species.

Recommendation: We recommend that the ARB reject the proponent's application for expansion based on the importance of local fisheries in the Annapolis Basin area and the potential risks posed to scallop, urchin, herring and lobster populations.

Factor D: The oceanographic and biophysical characteristics of the public waters surrounding the proposed aquacultural operation

Concerns related to species at risk and data deficiencies for the marine area near AQ#1039

One of the purposes of the Nova Scotia *Fisheries and Coastal Resources Act*, with respect to aquaculture, is to ensure that aquaculture is conducted with due regard to the health, well-being and recovery of species at risk [*FCRA*, s. 43A(h)]. This means that the impacts of AQ#1039 on all species at risk must be considered.

Species listed by Canada's federal *Species at Risk Act* (*SARA*) or by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in the Annapolis Basin region include Atlantic sturgeon, American plaice, white shark, North Atlantic right whale, American eel, shortfin mako, smooth skate, fin whale, harbour porpoise, porbeagle, Bluefin tuna, Atlantic cod and Atlantic wolffish, among other.[16] In many cases, we have very few available data points to examine the potential for interaction between open net-pen aquaculture and threatened marine species, nor do we have many available data points to investigate the impact of those interactions where they do exist.

In review of Rattling Beach, DFO suggests that data used to assess predicted exposure zones for at-risk and commercial species is of "low spatial and temporal resolution and too sparse to give a robust indication of the seasonality and spatial distribution" in many instances *(Nova Scotia Department of Fisheries and Aquaculture's Report on Consultations for Lease and Licence AQ#1039*, pg. 58). Rather than approval based on lack of provable impact to at-risk and commercial species, this low resolution data should necessitate an abundance of caution. Each species recorded in proximity of AQ#1039 should require further study and careful consideration prior to any licence or lease renewal.

Further to this case, DFO Canadian Science Advisory Secretariat (CSAS) documents developed to review the expansion proposal for Rattling Beach list a variety of species listed through *SARA* or

[15] DFO. (2020). DFO Maritimes Region Review of Proposed Marine Finfish Aquaculture Boundary Amendment, Rattling Beach, Digby County, Nova Scotia. DFO Can. Sci. Advis. Sec. Sci. Resp. 2020/015.
[16] *Ibid.*

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COSEWIC, that are either known to occur, "likely" to occur or possibly occurring in the marine area near the aquaculture site.[17] The range of uncertainty pertaining to the likelihood of occurrence in the area, and subsequently of the likelihood of interaction between at-risk species and aquaculture operations at AQ#1039, should dictate the rejection of expansion until such time as more can be known about the potential for harm to *SARA*- or COSEWIC-listed marine animals.

As the site has been operating outside of legal bounds for several years, it is not clear to what degree regular processes that do exist for the collection of environmental data at AQ#1039 can be relied upon for decision-making purposes. This is especially true of Nova Scotia's environmental monitoring program (EMP) for aquaculture. The EMP framework lays out protocols for the collection of data at open net-pen sites across the province, ensuring that sampling locations correspond with the leasing area for the site under review.[18] To-date, we do not know to what extent boundary violations would impact procedures governing EMP work at AQ#1039, nor whether any procedural adjustments made to accommodate expanded boundaries might have resulted in divergent EMP results at the site. For this reason, in our view, it is not clear that EMP data for AQ#1039 has been collected appropriately in the past five years.

The general lack of knowledge related to the potential risk that open net-pen aquaculture could cause to at-risk marine species near AQ#1039, coupled with the lack of clarity around the procedural validity of provincial EMP data collected at a site operating well outside its lease area, should be of concern to the ARB.

Recommendation(s): The ARB should to reject the proponent's application for expansion until AQ#1039 can demonstrate sound performance under Nova Scotia's EMP while in compliance with leasing boundary regulations, and until such time as further research pertaining to interactions between at-risk species and operations at AQ#1039 can be conducted.

Factor G: The sustainability of wild salmon

As far back as 1998, Fisheries and Oceans Canada (DFO) has recognized open net-pen salmon farming operations as a potential threat to wild Atlantic salmon in the Maritimes.[19] A 1998 DFO stock assessment refers to the wild salmon's at-sea life-stage as a "bottleneck" for the regulation of wild salmon abundance in the region, where fish face threats from predation, variable oceanographic

[17] *Ibid.*
[18] *Environmental Monitoring Program Framework for Marine Aquaculture in Nova Scotia*. (2020). Nova Scotia Department of Fisheries and Aquaculture. https://novascotia.ca/fish/documents/ns-emp-framework.pdf
[19] Chaput, G. (1998). *Status of Wild Atlantic Salmon (Salmo salar) Stocks in the Maritime Provinces*. Fisheries and Oceans Canada, Canadian Stock Assessment Secretariat. https://waves-vagues.dfo-mpo.gc.ca/Library/240696.pdf

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conditions, and aquaculture operations.[20] The assessment states that "the rivers which had strongly declining wild salmon returns were in the vicinity of the production areas" including rivers in the Bay of Fundy.[21] The Annapolis Basin marine area near site AQ#1039 provides habitat for the severely depleted and federally listed Inner Bay of Fundy (IBoF) Atlantic salmon population. This stock was first listed under *SARA* in 2001 and has struggled to recover ever since.

More recently, the Government of Canada released an Action Plan for IBoF salmon.[22] The Action Plan lists several research and recovery measures aimed at understanding impacts of open net-pen aquaculture on IBoF populations and reducing known problems (e.g., sea lice, escapees, disease transfer).[23] Such recovery measures include the assessment of sea lice, reporting of sea lice data, reviewing and improving escape management regimes, and understanding the impacts of disease on the survivability of IBoF salmon near open net-pens sites in the Bay of Fundy. With the implementation of recovery measures yet to come, now is not the time for larger leasing sites with the capacity to support expanded operations and augmented risk to IBoF salmon that may exist in the Annapolis Basin.

Because of extremely low IBoF salmon numbers at present, localized data are sparse regarding the impacts of sea lice and disease on survivability in the Annapolis Basin area. Elsewhere, a plethora of studies have identified sea lice and disease, cultivated at salmon farming sites in Atlantic Canada and beyond, as two of the most egregious threats to wild salmon populations globally.[24] [25] [26] [27] While Nova Scotia's comparatively low levels of open net-pen salmon production have kept sea lice loads low relative to other mega-producing provinces like New Brunswick or British Columbia, continued expansion at the mouth of the Annapolis Basin is likely to enhance the risk of outbreak and the subsequent risk to wild salmon and other fish in the region. Several salmonid viruses are known to exist

[20] *Ibid, pg. 9.*
[21] *Ibid, pg. 10.*
[22] Fisheries and Oceans Canada. 2019. Action Plan for the Atlantic Salmon (Salmo salar), inner Bay of Fundy population in Canada. Species at Risk Act Action Plan Series. Fisheries and Oceans Canada, Ottawa. vii + 59pp.
[23] *Ibid.*
[24] Gagné, N., & LeBlanc, F. (2018). Overview of infectious salmon anaemia virus (ISAV) in Atlantic Canada and first report of an ISAV North American-HPR0 subtype. Journal of Fish Diseases, 41(3), 421–430. https://doi.org/10.1111/jfd.12670
[25] Carr, J., & Whoriskey, F. (2004). Sea lice infestation rates on wild and escaped farmed Atlantic salmon (Salmo salar L.) entering the Magaguadavic River, New Brunswick. Aquaculture Research, 35(8), 723–729. https://doi.org/10.1111/j.1365-2109.2004.01094.
[26] Mordecai, G. J., Miller, K. M., Di Cicco, E., Schulze, A. D., Kaukinen, K. H., Ming, T. J., ... Suttle, C. A. (2019). Endangered wild salmon infected by newly discovered viruses. ELife, 8. https://doi.org/10.7554/eLife.47615
[27] Godwin, S. C. et al (2018) Heavy sea louse infection is associated with decreased stomach fullness in wild juvenile sockeye salmon. Can. J. Fish. Aquat. Sci. 75: 1587–1595 (2018) dx.doi.org/10.1139/cjfas-2017-0267

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in Nova Scotia, including the infectious pancreatic necrosis virus, infectious salmon anemia (ISA), and viral hemorrhagic septicaemia.[28]

The proximity of AQ#1039 to AQ#1040 is particularly concerning in this context as these two sites bracket the migratory bottleneck existing at the Digby Gut through which many species pass entering in and out of the Basin. Considering the proponent's stated interest in the expanding of production in Nova Scotia,[29] we should also assume that operations are likely at the KCS aquaculture site AQ#1041, further up the Annapolis Basin towards Bear River, during the lifetime of the licence and lease granted for AQ#1039. While this site is not currently operational, it is appropriate to examine the sustainability of wild salmon in the area in consideration of three proximous open net-pen salmon farming sites operating during the next decade of lease and licence approval at AQ#1039.

Indeed, for locations throughout Nova Scotia, industry has alluded to intentions for a mass expansion of open net-pen aquaculture, which could as much as triple the province's current production rates.[30] The EAC cannot account for all the precise locations at which the proponent would produce the annual 30 million pounds of salmon planned for.[31] But we do know that such an expansion would increase Nova Scotia's level of sea-based salmon production nearer to New Brunswick's, where sea lice have been proliferating widely for years.[32] [33] Outbreaks can result in the death of hundreds of thousands of farmed salmon.[34]

Similarly concerning in the context of planned expansions, ISA is now commonplace in Atlantic Canada.[35] ISA is often lethal to salmonids, and can spread throughout proximous salmon farms causing localized epidemics.[36] Research from B.C. identifies salmon farms as the likely cause of the appearance of the European ISA strain in wild Pacific salmon, suggesting that transmission from

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[28] *Finfish Reportable Diseases: Declarations by Province and Marine Area*. (2020). Canadian Food Inspection Agency. https://inspection.canada.ca/animal-health/aquatic-animals/diseases/finfish/eng/1450409829304/1450409830112

[29] Moore, G. (2020, April 9). Cooke commits to Nova Scotia as Cermaq turns its back on province. *Fish Farming Expert*. https://www.fishfarmingexpert.com/article/cooke-looks-to-expand-in-nova-scotia-as-cermaq-quits-province/

[30] Withers, P. (2019, March 29). Cooke unveils ambitious fish farm expansion plans in Nova Scotia. *CBC News*. https://www.cbc.ca/news/canada/nova-scotia/cooke-aquaculture-fish-farm-plans-expansion-1.5076206

[31] Sapin, R. (2021, April 12). Cooke CEO lays out salmon farming expansion plans for Nova Scotia, calls opponents "ill informed." *IntraFish*. Retrieved: URL.

[32] Gautam, R., Vanderstichel, R., Boerlage, A. S., Revie, C. W., & Hammell, K. L. (2017). Evaluating bath treatment effectiveness in the control of sea lice burdens on Atlantic salmon in New Brunswick, Canada. *Journal of Fish Diseases*, *40*(7), 895–905. https://doi.org/10.1111/jfd.12569

[33] *2020 New Brunswick Annual Sea Lice Management Report*. (2021). Atlantic Canada Fish Farmers Association. Retrieved: URL.

[34] Smith, C. (2017, March 20). Salmon farms receiver feared "environmental disaster" from sea lice outbreak. *CBC News*. https://www.cbc.ca/news/canada/new-brunswick/sea-lice-outbreak-fundy-1.4030118

[35] *Locations infected with infectious salmon anaemia*. (2021). Canadian Food Inspection Agency. Retrieved: URL.

[36] Lyngstad, T. M., Hjortaas, M. J., Kristoffersen, A. B., Markussen, T., Karlsen, E. T., Jonassen, C. M., & Jansen, P. A. (2011). Use of Molecular Epidemiology to Trace Transmission Pathways for Infectious Salmon Anaemia Virus (ISAV) in Norwegian Salmon Farming. *Epidemics*, *3*(1), 1–11. https://doi.org/10.1016/j.epidem.2010.11.001

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farmed to wild stocks is occurring.[37] An ISA strain of European origin has also been detected in wild Atlantic salmon in Atlantic Canada, although a full picture of ISA sources and transmission pathways in Atlantic Canada has not yet been achieved.[38] Without access to information on the disease-related history of the site, it is impossible to comment properly on the localized risk of disease transfer to wild stocks at AQ#1039. Research from the Quoddy, Maine and Fundy Isles region has shown that tidal flushing rates in the Bay of Fundy can enhance the capacity for ISA transfer between nearby sites.[39] Transmission between farms, and the potential for transmission to wild stocks, should be of grave concern to the ARB given the proximity of AQ#1039, AQ#1040 and AQ#1041 to one another and to severely depleted wild salmon rivers.

The EAC is also aware of the development of bacterial diseases spreading at sites in the Annapolis Basin, based on at least two recorded applications of Oxytetracycline at Rattling Beach and one recorded application of Florfenicol at Victoria Beach (Port Wade) reported by the Canadian Food Inspection Agency (CFIA) between 2016 and 2018.[40] Treatment data for 2019 and 2020 is not yet available and as such we are unable to provide comment regarding this time period. We do not know why salmon at AQ#1039 and AQ#1040 were treated. Further study on the transmissibility of bacterial infections from fish farms to wild Atlantic salmon should be conducted before any expansion approvals.

The transfer of genetic materials from one species into the gene pool of another (introgression) of wild and escaped farmed salmon has been repeatedly shown to reduce fitness and survivability in wild stocks.[41] [42] [43] Aquaculture fish in eastern North American river systems have been located up to 200 kilometres from source locations,[44] putting any wild salmon remaining in river systems near the Annapolis Basin, IBoF or otherwise, at immediate risk. Introgression is likely when small, at-risk salmon in

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[37] Morton, A., & Routledge, R. (2016). Risk and precaution: Salmon farming. *Marine Policy*, *74*, 205–212. https://doi.org/10.1016/j.marpol.2016.09.022

[38] Gagné, N., & LeBlanc, F. (2018). Overview of infectious salmon anaemia virus (ISAV) in Atlantic Canada and first report of an ISAV North American-HPR0 subtype. Journal of Fish Diseases, 41(3), 421–430. https://doi.org/10.1111/jfd.12670

[39] Gustafson, L. L., Ellis, S. K., Beattie, M. J., Chang, B. D., Dickey, D. A., Robinson, T. L., Marenghi, F. P., Moffett, P. J., & Page, F. H. (2007). Hydrographics and the timing of infectious salmon anemia outbreaks among Atlantic salmon (Salmo salar L.) farms in the Quoddy region of Maine, USA and New Brunswick, Canada. *Preventive Veterinary Medicine*, *78*(1), 35–56. https://doi.org/10.1016/j.prevetmed.2006.09.006

[40] *National Aquaculture Public Reporting Data*. (2021). Canadian Food Inspection Agency. https://open.canada.ca/data/en/dataset/288b6dc4-16dc-43cc-80a4-2a45b1f93383#wb-auto-6

[41] Karlsson, S., Diserud, O. H., Fiske, P., Hindar, K., & Handling editor: W. Stewart Grant. (2016). Widespread genetic introgression of escaped farmed Atlantic salmon in wild salmon populations. ICES Journal of Marine Science, 73(10), 2488–2498. https://doi.org/10.1093/icesjms/fsw121

[42] Jensen, ø, Dempster, T., Thorstad, E., Uglem, I., & Fredheim, A. (2010). Escapes of fishes from Norwegian sea-cage aquaculture: causes, consequences and prevention. Aquaculture Environment Interactions, 1(1), 71–83. https://doi.org/10.3354/aei00008

[43] Morris, M. R. J., Fraser, D. J., Heggelin, A. J., Whoriskey, F. G., Carr, J. W., O'Neil, S. F., & Hutchings, J. A. (2008). Prevalence and recurrence of escaped farmed Atlantic salmon (Salmo salar) in eastern North American rivers. Canadian Journal of Fisheries and Aquatic Sciences, 65(12), 2807–2826. https://doi.org/10.1139/F08-181

[44] *Ibid.*

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proximity to open net-pen operations are routinely exposed to farmed escapees.[45] These threats to wild salmon populations cannot be prevented by farm management plans or regulatory efforts. Escaped aquaculture fish from sites in the Annapolis Basin have been reported in the Bear River.[46] While the full extent to which escapes are occurring in the Annapolis Basin is unclear, open net-pen sites in Nova Scotia have shown a routine susceptibility to breakup in challenging weather conditions.[47] [48] This includes at AQ#1039 where lost pens were found on the shoreline across the Digby Gut in 2014.

It is likely that IBoF salmon in the Annapolis Basin area are avoiding extirpation only by the thinnest of margins. The potential impacts of three serious risks (sea lice, disease transfer, introgression; all of which are enhanced by expanded salmon farming operations) posed by three sites in the Basin are more than we should be willing to bear. The ARB's mandate for the consideration of the sustainability of wild salmon is critical for the survival of IBoF salmon.

Beyond the IBoF salmon, other COSEWIC-listed wild Atlantic salmon populations should also be considered in the area, including the Southern Upland and Outer Bay of Fundy (OBoF) stocks. While not yet listed under *SARA*, despite COSEWIC recommendations, Southern Upland populations continue to face alarming declines throughout their range.[49] Southern Uplands are traditionally known to run the Annapolis River and the Bear River. Population data for these river systems are sparse, but DFO has confirmed the presence of juvenile wild salmon in the Annapolis watershed as recently as 2018.[50] The Bear River was supporting a modest salmon run, in-part due to the efforts of a Bear River First Nation wild salmon restoration program in the watershed, as recently as 2013.[51] Bear River First Nation referred to nearby salmon farming sites as detrimental to their efforts to recover Bear River wild salmon populations.[52]

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[45] Leggatt, Rosalind & O'Reilly, P. & Blanchfield, P. & Mckindsey, Christopher & Devlin, R.. (2010). Pathway of effects of escaped aquaculture organisms or their reproductive material on natural ecosystems in Canada.
[46] Weiler, M. (2013). *Mi'kmaw and the Atlantic Salmon (Salmo salar) in Mainland Nova Scotia*. Mi'kma'ki All Points Services Inc. (MAPS). http://mikmaki.ca/wp-content/uploads/2016/07/MAPS_Mikmaw_and_the_Atlantic_Salmon.pdf
[47] N.S. launches probe after massive winter storm damages fish farm, frees salmon. (2017, February 24). *CTV News*. https://www.ctvnews.ca/sci-tech/n-s-launches-probe-after-massive-winter-storm-damages-fish-farm-frees-salmon-1.3300189
[48] Patil, A. (2018, January 7). Storm damage to fish farm pens alarms Shelburne County fisherman. *CBC News*. https://www.cbc.ca/news/canada/nova-scotia/debris-from-fish-farm-concerns-lobster-fisherman-1.4476332
[49] Bowlby, H.D., Gibson, A.J.F., and Levy, A. 2013. Recovery Potential Assessment for Southern Upland Atlantic Salmon: Status, Past and Present Abundance, Life History and Trends. DFO Can. Sci. Advis. Sec. Res. Doc. 2013/005. v + 72 p.
[50] DFO. (2020). DFO Maritimes Region Review of Proposed Marine Finfish Aquaculture Boundary Amendment, Rattling Beach, Digby County, Nova Scotia. DFO Can. Sci. Advis. Sec. Sci. Resp. 2020/015.
[51] Weiler, M. (2013). *Mi'kmaw and the Atlantic Salmon (Salmo salar) in Mainland Nova Scotia*. Mi'kma'ki All Points Services Inc. (MAPS). http://mikmaki.ca/wp-content/uploads/2016/07/MAPS_Mikmaw_and_the_Atlantic_Salmon.pdf
[52] *Ibid*.

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Recommendation: The EAC recommends pausing operations at AQ#1039 until the outstanding regulatory violations are resolved, and then restricting the lease site to the 8.75-hectare area initially intended to ensure that damage to *SARA*-listed IBoF and COSEWIC-listed Southern Upland and OBoF salmon populations is minimal. Previous (NSDFA) decisions to reject site applications on the Eastern Shore (Shoal Bay, Beaver Harbour) in similar proximity to threatened wild salmon populations set precedent.

Conclusion

In conclusion, we hope that the ARB will find this information helpful in coming to a decision on the expansion of the proponent's leasing area at Rattling Beach. In our view, the combination of noncompliance at the site, coupled with the potential risks to marine ecosystems, species at-risk, wild Atlantic salmon and commercial fisheries in the area should necessitate suspended operations until the site can be shown able to operate within legal boundaries and with minimal impact to the localized environment. We hope in future for an opportunity to bring these arguments and others localized to open net-pen aquaculture sites before the Board through granted intervenor status. Until that time, we appreciate this opportunity to contribute in writing and we hope that the Board will examine and deliberate seriously upon the concerns presented here.

Sincerely,

Simon Ryder-Burbidge
Marine Conservation Campaigner
Ecology Action Centre
E: sryderburbidge@ecologyaction.ca
T: 902-446-4840

RECEIVED JULY 25, 14

NOVA SCOTIA

Fisheries and Aquaculture
Office of the Deputy Minister

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NSARB-2021-001
WRT-005

July 22, 2014

Ronald Neufeld
[redacted]
[redacted] Granville Ferry
Nova Scotia, [redacted]

Dear Mr. Neufeld:

Re: FOIPOP Application Number FIS-14-9

Thank you for your request for access to information under the Nova *Scotia Freedom of Information and Protection of Privacy (FOIPOP) Act* which was received at this office on June 3, 2014. You requested:

> "Re: Aquaculture site 1039, Annapolis Basin. All lease inspection reports, including site drawings and photos, from Jan 2010 to June 2014."

On July 4, 2014, we informed you that we had given a third party notice under Section 22 of the *Freedom of Information and Protection of Privacy Act*. We have since received their agreement to release their documents.

Attached are the documents related to your request. You will note that these records have been severed pursuant to *Freedom of Information and Protection of Privacy Act.* Section 20 – Personal Information – Mandatory Exemption, i.e.

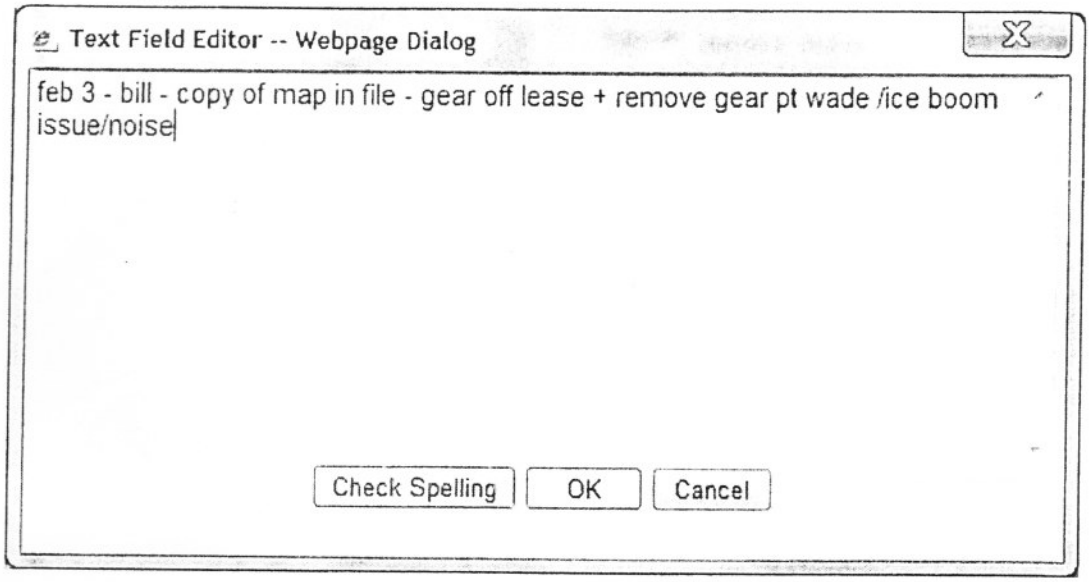
> The head of a public body shall refuse to disclose personal information to an applicant if the disclosure of the information would be an unreasonable invasion of a third party's personal privacy.

If you have any questions about this letter or would like to discuss your application, please contact Cathy Shaw, IAP Administrator at 902-424-2216 or, Jennifer Dell, IAP Coordinator, at 902-424-6128.

Yours truly,

Brian Rogers
Deputy Minister
Information, Access and Privacy Administrator
Freedom of Information and Protection of Privacy Act

Tue 3/10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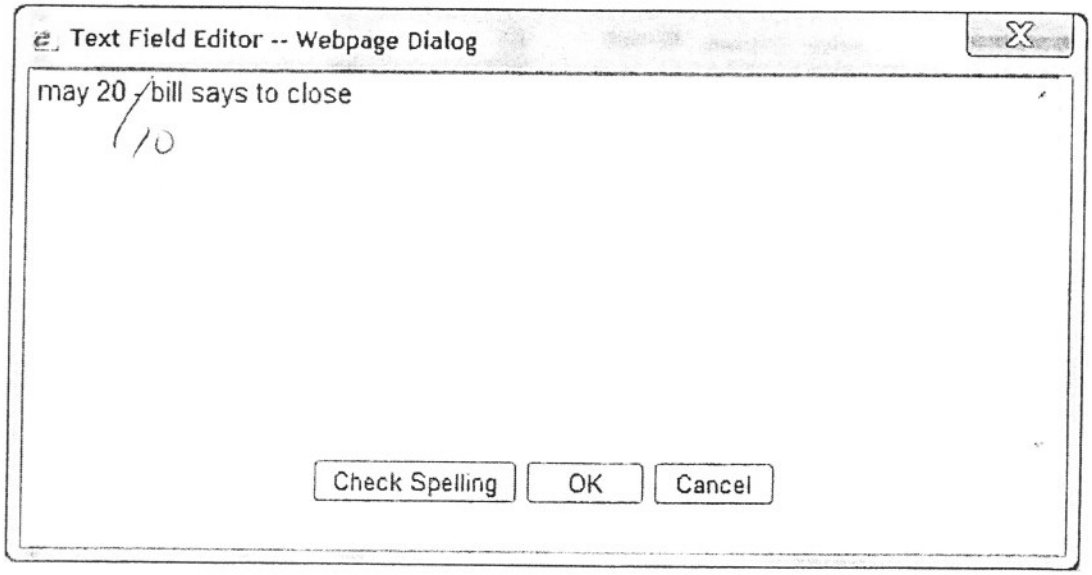
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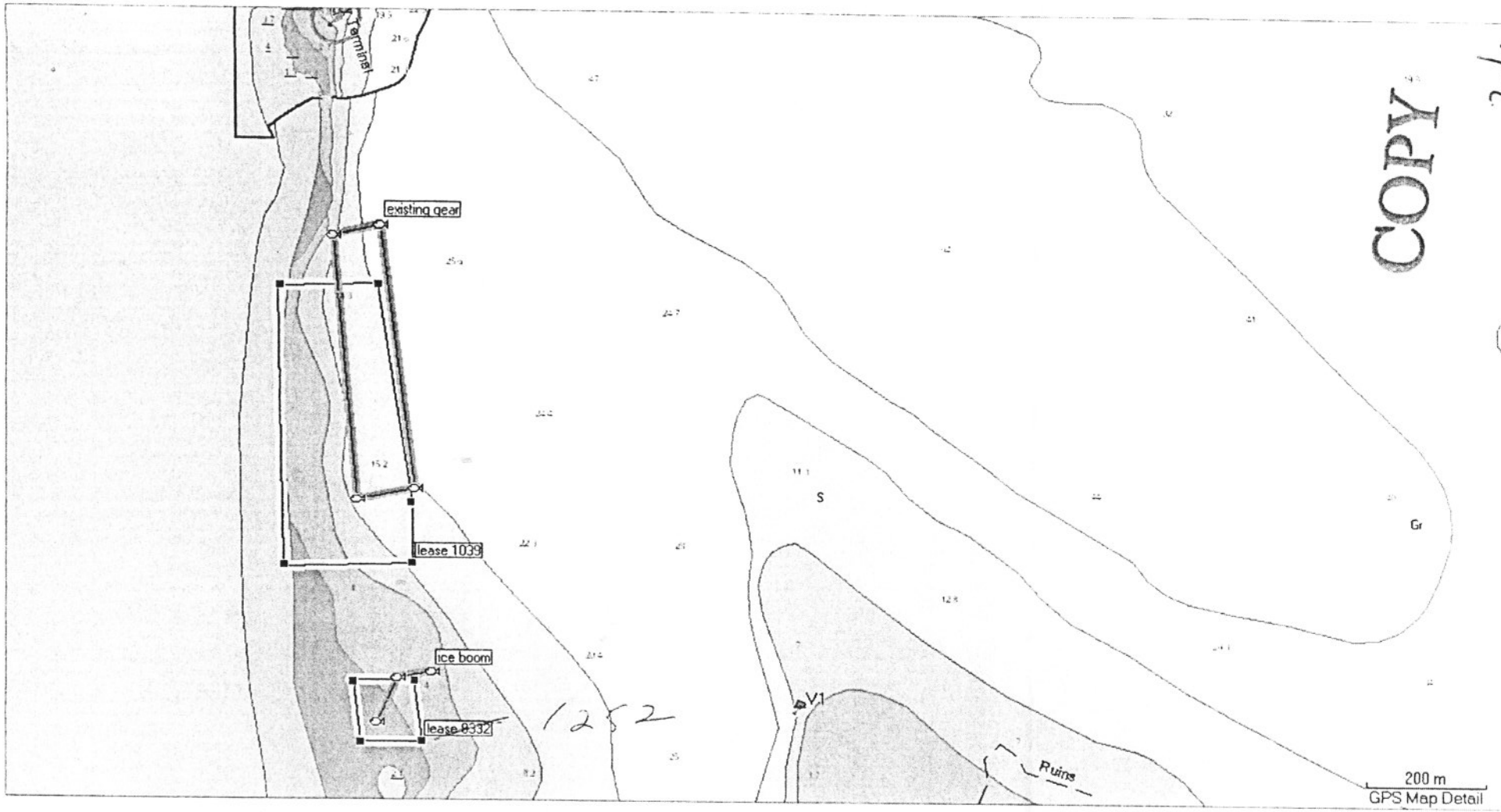


COPY

2/6

- GEAR OFF LEASE
- NOISE
- ICE BOOM ISSUE
- REQUEST TO REMOVE PT WADE GEAR.

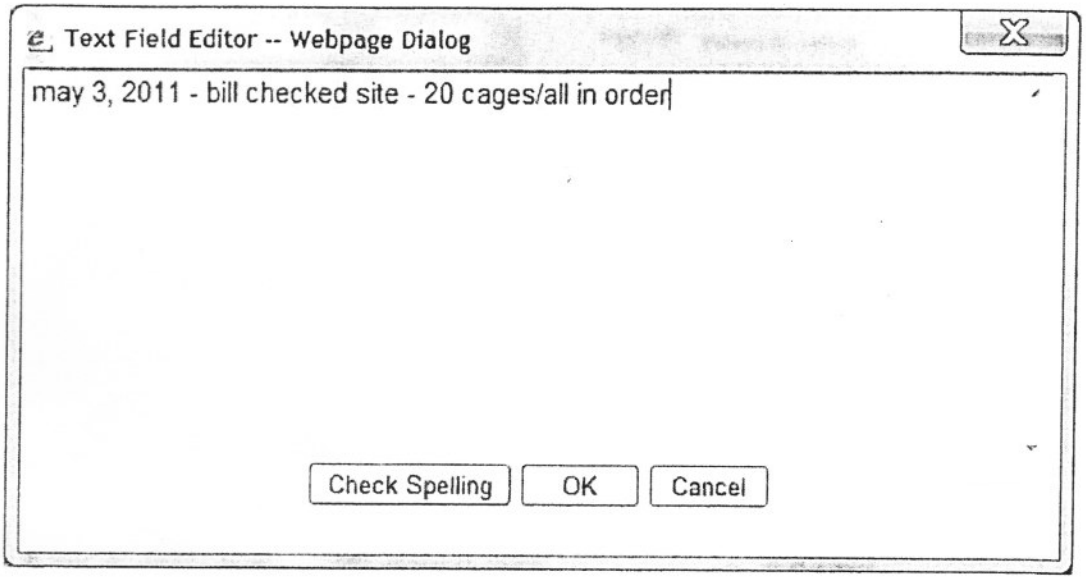
RATTLING BEACH

= 100 M

EMI ? -

1252

1039



>>> Hon. Sterling W (DFA) Belliveau 7/28/2011 4:47 PM >>>

>>> " < 7/28/2011 4:32 PM >>> Section 20

Thank you the matter has been resolved with cooke fisheries spoke to . on informed him was satisfied with the efforts in reducing feed blower noises at this time I would say no further action should be taken. Thank you Section 20

----- Original Message -----

From: Hon. Sterling W (DFA) Belliveau

To: Section 20

Sent: Thursday, July 28, 2011 3:56 PM

Subject: Our Reference F74

Dear Section 20

COPY

3/6

From: Chuck W McKenna
To: Giles, Marshall
CC: Balch, Toby; Cusack, Roland R; Haliburton, Bill M; Vezina, Marion E
Date: 2010-07-12 2:11 PM
Subject: Aquaculture Inspection 2010

Marshall,

Bill has provided the following report on his recent inspection and compliance activities.

We are being aggressive when leaseholders are not in compliance and especially when there are situations involving derelict gear.

Chuck

>>> Bill M Haliburton 7/12/2010 1:50 PM >>>
Chuck,

Here is an update of aquaculture inspection activities so far this year.

69 Lease Inspections of which 41 were oyster leases.

Warnings - 3

- Linda Walker - Ordered to remove partially sunk cage from the water by July 1/10. Written request for an extension since she is in negotiations to sell the lease. Granted an extension and will check with her August 1/10 for an update. Objective is to have the gear removed before winter.
-
-

out of scope

Side Scans - 2

-

out of scope

-

Removals - 5

- Kelly Cove Salmon, Rattling Beach Digby Co. Ice boom removed from Duncan Casey's site.
-
-

out of scope

Let me know if you need any more info.

Bill

COPY

4/6

Kelly Cove Salmon Ltd.

Date	Location of lease	Lease Number	Description of Gear	Species on lease	% in Use	Compliant	Action Taken

Date	Location of lease	Lease Number	Description of Gear	Species on lease	% in Use	Compliant	Action Taken

out of scope

Date	Location of lease	Lease Number	Description of Gear	Species on lease	% in Use	Compliant	Action Taken

Date	Location of lease	Lease Number	Description of Gear	Species on lease	% in Use	Compliant	Action Taken
07-May-13	Rattling Beach, Annapolis Basin - Dig C	1039	20 cages with 2-3 lb fish, feed barge. Gear off lease to the north and east. Marked with yellow compensator buoys.	Salmon	100	no	noncompliant - Emailed to bring into compliance.

, section 20

Date	Location of lease	Lease Number	Description of Gear	Species on lease	% in Use	Compliant	Action Taken

Date	Location of lease	Lease Number	Description of Gear	Species on lease	% in Use	Compliant	Action Taken

9/5

feb 19/14 bill advised management that applic is off lease - no letters sent etc

COPY

6/6

RECEIVED
By Nova Scotia Aquaculture Review Board at 2:57 pm, Aug 09, 2021

NSARB-2021-001
WRT-005

Honorable Keith Irving
Minister of Environment
Nova Scotia Department of the Environment

July 30,2021

Re: Complaint re :AQ 0772 Owls Head and
AQ 0833 Ship Harbour

cc. Honorable Keith Colwell, Minister of Fisheries and Aquaculture
Kimberly Adair-MacPherson, Auditor General for Nova Scotia
Ecojustice
Board Members of the Association for the Preservation of the Eastern Shore
Healthy Bays Network
Eastern Shore Cooperator

On 29 May, 2020, aquaculture license and lease AQ # 0772 was renewed. Section 6.(b) of the Decision Document established the following condition:
“By October 1, 2020 to ensure that all gear at the site that may reasonably have resulted from past aquacultural operations at the site is removed from the water and adjacent shoreline.” As of todays date, this condition has not been met and these leases remain in non compliance..

There was evidence provided on October 15, 2020 by myself when a complaint of non compliance with lease conditions was registered with the Department of the Environment that a buoy with a chain still attached was drifting across eelgrass beds and another buoy adrift posed a potential navigational hazard.

After many back and forth calls with the Department of the Environment on November 12, 2020 Matthew Lang, Conservation Enforcement Coordinator for the Conservation Officer Service said a conservation officer would be assigned to investigate this complaint.

On December 9 Mr Lang said that the Department had made contact with the company and that this complaint had been referred for investigation. It was on this date that I also notified the Department that AQ 0833 (Ship Harbour) was also out of compliance as there were no corner buoys marking the site.

After several calls to get an update in January 2021 I was contacted by Brian Mailman, the investigating officer assigned to this case. Mr. Mailman said that he had been in contact with Snow Island Salmon, the proponent and that they were in the process of hiring a contractor that would work on getting the lease into compliance. When asked about a time line Mr. Mailman said he gave the company a couple of months to get the work done.

I contacted the Department of the Environment on March 10, April 7 and April 13 to get an update on this complaint. On April 14 Mr. Mailman left a message stating that the company was working on the removal and that he didn't know when it would be done but thought soon.

On April 15th I left a message with Mr. Mailman stating that as far as we could tell there was no evidence of the clean up starting at the site.

On April 16th Mr Mailman phoned back and asked me to call him. I called on April 20, 23 and May 13 and attempted to leave a message but the mailbox of Mr. Mailman was full. Each time I phoned the Department to leave a message with the receptionist who said she would forward an email to Mr. Mailman.

On May 17 Mr. Mailman returned my call and acknowledged that no work had been done at the site. He stated his frustration with this situation as well. He said that he would be contacting the company and giving them a firmer deadline. He told me that he didn't want to share that deadline but hoped the work would be completed soon. He said that legal action was mentioned to the company and that we should see some progress within a month.

On June 28th I left a message with the Department that no clean up had been done at the site.

On July 7th I phoned to get an update and followed this up with an email to the Department asking how they were going to proceed with this complaint.

On July 10 Mr. Mailman phoned and said he was out to the site to verify that no work had been done. He said that the Department would now move to enforcement but he did not state what that would entail.

I am now asking what enforcement measures will be taken by the Department of the Environment on this matter?

Please contact me in writing about the resolution of this complaint. Thank you

Wendy Watson Smith, President
Association for the Preservation of the Eastern Shore
[redacted], Tangier, N.S. [redacted]

NSARB-2021-001
WRT-005

RECEIVED
By Nova Scotia Aquaculture Review Board at 2:47 pm, Aug 09, 2021

SWORN ORAL STATEMENT August 9, 2021
2021
Re: AQ 1039, Rattling Beach
May 10, 2021

I will be speaking to the history of lease violations at this site and how these refer to the factors of:
* Optimum Use of the Marine Resources,
* Fishery Activities in the Public Waters surrounding the Proposed lAquaculture Operation and
* Other Users of the Public Waters surrounding it.

The Performance Review Material that was available to the public was an assessment of the historical operation from a technical perspective and it also reviews whether the operator has been conducting the operation in compliance with the Fisheries and Coastal Resources Act, the Aquaculture License and Lease Regulations and the Aquaculture Management Regulations.

It is stated in this report that Kelly Cove Salmon first obtained the lease and license for this site in 2004 and was granted 3 license and lease renewals since. In 2016 because site 1039 was operating outside the bounds of the issued lease space Kelly Cove Salmon was given two options by the Nova Scotia Department of the Environment to come into compliance. One was to bring the lease into compliance. The second was to apply for an Adjudicative Amendment. Kelly Cove Salmon chose to apply for an adjudicative boundary amendment which is what we are dealing with today. The Department of Fisheries and Aquaculture knowingly accepted lease expansion applications from this operator despite the operation existing in non compliance as per the Aquaculture Lease and License Regulations. This acceptance of a non compliant lease by the Department is brushed over as if it is both reasonable and acceptable.

How is it possible to apply for a lease retroactively? How can communities assess the impact of a lease adequately when proponents can expand without going through the assessment required by the law? In the Performance Report it is stated that “no complaints have resulted in an offence, ticket or charges specific to site # 1039. My understanding is that there were complaints submitted about this site but none were acted upon. Attached is a copy of a FOIPOP inquiry made in 2014. My question to the ARB is, does it require a formal complaint to initiate enforcement action even if the Department knowingly is aware that a lease is in a state of non compliance?

In reading the Report on Outcomes of Consultation and the Review of DFO Feedback in DFO's Response to DFA I have many concerns how other users of the marine environment and local communities will be impacted by this lease application. I do not have time to get into all of these in this short amount of time. The main concerns are:

* the potential impact of cumulative exposures to organic loading, pesticides, and drugs has not been considered in the document in any detail as stated in the report of the CSAS (bullet 314 ,page 16,17,19 and 21) There are many species including wild salmon, other wild fish, lobster ,scallops and urchin that are at potential risk because of this.

*It is stated that DFO needs to see mitigation of effects from the release of farmed fish to inform it's risk assessment and review of the proposal (bullet #7 LOA page 5,6)

*DFO was unable to fully assess if the proponent would be meeting the condition set out in the AAR to take reasonable measures to mitigate risks of serious harm to fish outside the facility from the release of biochemical oxygen demanding matter through its' operations. (page 4 DFO LOA dated October 11,2019)

We are also very concerned about the location of this site. Every species in the Annapolis River watershed that migrates to sea will potentially be affected by passing by this site.

We do not know if reasonable measures have and will be taken to address the above concerns. Where is the precautionary principle in all of this? How will other users of the Marine environment and adjacent communities know with any certainty how we will be impacted by this site when we rely on DFO to get the answers to their questions in a Farm Management Plan that is shared after the lease is approved?

This site is just one example of many in the province where lease violations are being allowed to occur. Another such example is closer to where I live on the Eastern shore. This site has not been stocked since 2013 and yet aging and derelict gear from the site have not been dealt with. This abandoned site is in public waters. A renewal for this site was applied for in 2019 and one of the conditions of the lease when it was approved in May 2020 was that by October 2020 the proponent was to ensure that all gear at the site that may reasonably have resulted from past aquaculture operations be removed from the water and adjacent shoreline. This condition still has not been met. And it is not because of the lack of persistent requests by local citizens. Attached is a copy of the history of one complaint about this site sent to the Minister of the Environment.

There are four other sites where Kelly Cove Salmon is in non-compliance with its leases. They are sites AQ 0742 - Brier Island, AQ 1006 - Saddle Island, AQ 1040 - Victoria Beach and AQ 1205 - Coffin Island.

We, the public of Nova Scotia and coastal communities are important stakeholders in the use of our public waters. We believe that our voices and concerns are important and we want to be included in this process. Because of the above and the fact that this lease has been out of compliance with its boundaries for over 7 years without remedial action by the lease holder or enforcement action by the regulator, we feel this lease expansion should be denied. In our view , the ARB process was not intended to be a replacement for effective regulatory enforcement. To approve the lease, effectively sanctions deliberate non compliance by the aquaculture operator at this and other sites, as well as deficient enforcement over a number of years by government regulators. We do not believe that NSDFA is capable of regulating this industry adequately and therefore this lease expansion application should be rejected.

Thank you

Wendy Watson Smith, President
Association for the Preservation of the Eastern Shore
[redacted], Tangier, Nova Scotia

RECEIVED
By Nova Scotia Aquaculture Review Board at 10:47 am, Nov 09, 2021

Kwilmu'kw Maw-klusuaqn
Mi'kmaq Rights Initiative
Our Rights. Our Future.

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November 1, 2021

Jean McKenna
Nova Scotia Aquaculture Review Board
P.O. Box 2223
Halifax, N.S., B3J 3C4
Email: aquaculture.board@novascotia.ca

RE: (Kelly Cove Salmon Ltd. V. Minister of NS Department of Fisheries and Aquaculture, et al) (Matter No. [21-1526])

Dear Jean McKenna,

In reference to our letters dated October 15, 2021 to the Department of Justice and Stewart McKelvey Lawyers, the purpose of this letter is to address the Nova Scotia Aquaculture Review Board (Board) concerning the impact of the boundary expansion by the proponent, Kelly Cove Salmon Ltd. on the Mi'kmaq of Nova Scotia. The letter will also address more specific issues concerning historical and archeological significance and the potential impact on the Rights and Title of the Mi'kmaq of Nova Scotia as protected under sec. 35 of the Constitution.

It has been brought to our attention that Kelly Cove Salmon Ltd. have been operating outside its intended boundary for the past 15 years in the Annapolis Basin. The proponent has since applied for a boundary amendment to Marine Finfish Licence and lease AQ#1039.

The Assembly of Nova Scotia Mi'kmaw Chiefs (ANSMC) is an unincorporated entity comprised of eleven of the thirteen Chiefs of Bands in Nova Scotia. It directs the Mi'kmaw Nation Negotiation team in the Made-in-Nova Scotia Process and oversees the KMKNO Consultation Department in constitutionally mandated consultations and accommodations.

The Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO) is an incorporated entity under the Societies Act, R.S.N.S. 1989, c.435. It is mandated to support the Maw-lukutijik Saqmaq (the Assembly of Nova Scotia Mi'kmaw Chiefs) and the Mi'kmaw Nation Negotiation Team in the Mi'kmaq-Canada-Nova Scotia tripartite Made-in-Nova Scotia process which seeks to reach agreement on the full implementation of Mi'kmaw rights and title in Nova Scotia. The Consultation Department of KMKNO provides research services and coordinates consultation with the Queen in Right of Canada and the Queen in Right of Nova Scotia for nine of the eleven member Bands of the Maw-lukutijik Saqmaq in the process of ensuring the Crown fulfills its duty to consult and accommodate.

The Supreme Court of Canada has held that the Crown has a duty to consult with First Nations when it considers conduct that might adversely impact potential or establish Aboriginal or treaty rights.[1]

Mi'kmaq continue to engage in traditional harvesting activities throughout Nova Scotia, including within the area of the proposed amendment application by Kelly Cove Salmon Ltd. at the Rattling Beach site. As the First Nation closest to the Kelly Cove Salmon Ltd. expansion site, Bear River First Nation has, (in addition to its interest in the archaeological heritage), the most immediate concerns regarding potential effects of the Kelly Cove Salmon Ltd. amendment application on its members rights to harvest. If operations continue and the application to amend the site boundaries is successful that all Mi'kmaq, but particularly those of Bear River First Nation will be negatively affected. The ongoing participation in traditional harvesting on the waters of the Rattling Beach site by the Mi'kmaq of Nova Scotia will be negatively impacted from the approval of the Kelly Cove Salmon Ltd. amendment application. This is certainly the case for the Bear River First Nation as they are the most affected by this project.

Undoubtedly, there is a historical significance for the Mi'kmaq of Nova Scotia on the Rattling Beach site. The Assembly will be working with their communities to revive traditional and ancient Mi'kmaw customs. The beach areas within Digby County were used for summer campsites dating back two thousand years. During this time, the Mi'kmaq would harvest porpoise. The meat was used for food, the porpoise oil was used as a machine lubricant, leather softener, laxative, a remedy for earaches and baiting bear traps.[2] This application for expansion by the proponent will, upon approval, have a negative effect on the Mi'kmaq of Nova Scotia which may be irreversible and non compensable.

Our Mi'kmaw cultural and archaeological heritage demonstrates the intense and multifaceted relationship our people continue to have with Rattling Beach, the Digby Gut and surrounding region. Previous negative impacts have not eliminated the importance of this area to our people for traditional activity and cultural practice, but it has highlighted the need to protect what remains for our people, and seven generations to come. Archaeologically, any current activities that have the potential to impact our archaeological heritage is intrinsically a matter of impacts to our rights and title. Archaeological heritage is a regularly cited source of evidence of indigenous peoples' rights and title in legally binding processes and this area is documented as an archaeologically, and culturally, rich place. It is critical to understand that any potential impact to Mi'kmaw archaeological heritage, including a lack of detection, loss, disturbance, poorly developed understanding of them, and/or cultural significance of them, is inherently an impact to Mi'kmaw rights and title.

Underwater archaeological research methods are well established and are expected to form part of the research plans for any archaeological impact assessment project that concerns any submerged coastal nearshore landscape. The landscapes of Mi'kma'ki have changed dramatically in the more than 13,000 years that L'nu peoples have been here; What is now submerged would have, in many cases, been dry land as the landscapes have changed due to sea level rise, glaciers melting, isostatic rebound and other factors.

[1] Haida Nation v British Columbia (Minister of Forests), 2004 SCC 73.

[2] Archives, Nova Scotia. "Admiral Digby Museum." *Nova Scotia Archives*, P.8133. 23 Aug. 2016.

While there are no proposed changes by the Proponent on production, the types of species harvested, gear use or location, there are concerns about wild stock exposure to viruses and parasites from daily aquaculture operations at Kelly Cove Salmon Ltd. Bear River First Nation utilize the area for traditional harvesting of these wild species and concerns over the health of wild stock from contagions originating from the proposed site should be addressed prior to approval.

Yours in Recognition of Mi'kmaw Rights and Title,

Twila Gaudet, B.A., LL.B.
Director of Consultation
Kwilmu'kw Maw-Klusuaqn Negotiation Office

c.c.:
Beata Dera, Director of Consultation, Kwilmu'kw Maw-Klusuaqn Negotiation Office
Robert Ceschiutti, Manager, Nova Scotia Department of Fisheries and Aquaculture.