

2023

NSARB-2023-001

Nova Scotia Aquaculture Review Board

BETWEEN:

Kelly Cove Salmon Ltd.

APPLICANT

and

Minister of Nova Scotia Department of Fisheries and Aquaculture

PARTY

and

Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO)

Queens Recreational Boating Association (Brooklyn Marina)

22 Fishermen of Liverpool Bay

Region of Queens Municipality (RQM)

Protect Liverpool Bay Association (PLBA)

INTERVENORS

Affidavit of Charmaine C. Stevens

I affirm and give evidence as follows:

1. I am Charmaine Stevens, elected Councillor for Acadia First Nation, also known as Wasoqopa'q First Nation. I have held this position for the past 28 years. As a Councillor I hold the fishing portfolio and am directly involved in all matters at Acadia First Nation concerning the Food, Social & Ceremony Fisheries (FSC), the Moderate Livelihood Fishing (MLF), and Acadia's commercial fishing operations (Kespuwick Resources Inc.). I am the Chair of the board for Kespuwick Resources Inc.
2. I have personal knowledge of the evidence affirmed in this Affidavit except where otherwise stated to be based on information and belief.
3. I state, in this Affidavit, the source of any information that is not based on my own personal knowledge, and I state my belief of the source.
4. My comments below relate to inadequate consultation sessions held by the Province of Nova Scotia with the Mi'kmaq of Nova Scotia.

5. Following correspondence from the Department of Fisheries and Aquaculture dated September 25, 2019 Acadia First Nation raised concerns with the proposed applications by Kelly Cove for Liverpool Bay, Queens County and requested Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO) start the process for consultation with the Province.
6. In total we had four virtual consultation sessions with the Province. I attended all four. Attached to this Affidavit as **Exhibit A** is a letter from the Province dated May 1, 2023 which includes the record of those meetings.
7. I attended the first consultation meeting on December 9, 2020. The meeting was held virtually. Acadia's Director of Fisheries, Curtis Falls, attended the meeting with me.
8. Although I have good knowledge of the lobster fishing industry and fishery operations at Acadia First Nation, I have no experience with fish farms. To prepare for the meeting I tried to research as much information as I could by searching the internet. We have no one on staff at Acadia who has expertise in any type of fish farming. We have no one with expertise in environmental science, marine biology or any other educational or lived experience that could help me better understand the possible scientific and technical effects of the proposed expansion application.
9. The initial meeting from my perspective was overwhelming. There was a significant amount of material and information presented by the Province. The presenters were eager to get through their respective presentations and at times seemed to want to push through and not wait for questions. I felt rushed when trying to bring up concerns and ask questions. At this initial meeting I felt the concerns I raised were quickly dismissed. It was clear that we needed more time and more sessions.
10. It felt very much to me that the onus was on us to challenge the application. It felt that the Province was arguing on behalf of Kelly Cove. Kelly Cove submitted the application and the Province had their various Departments and personnel attend these meetings to argue on their behalf. At Acadia we had no experts. We had no idea what kind of questions to ask. We did not have offers of funding to assist us in obtaining the independent expertise we needed. It was up to myself and our Director of Fisheries, Curtis Falls, to figure out what to ask and figure out what were the potential issues. This was a heavy weight for us to carry out on behalf of our First Nation without having the expertise necessary. We also never received plain language documents breaking down some of the heavy scientific information being stated to us.
11. In fact I raised the above concerns at the March 2, 2022 meeting. It felt very much like a David and Goliath situation. We were assured that no sides were being taken but yet it baffled me as to why every concern we raised about expansion was being answered by the Department. Kelly Cove did not have to answer or prepare any response. In fact the Province did not even let Kelly Cove know what concerns we had.
12. I raised the concerns of Archeology during one of the later meetings with the Province. The Province questioned why we had not raised this concern at earlier meetings and the tone was certainly frustration on their part. In fact during the meeting, one of the Province's representatives started looking through records of the earlier meetings to see whether we had raised the issue. This was upsetting to me. What was the purpose of additional consultation meetings if we could not, after thinking about what we heard in prior sessions, bring up new concerns? Frankly there were so many issues it is no wonder we could not think about or express all of them at the initial meeting. The Mersey river system has one of the highest concentrations of Mi'kmaw artifacts in Nova Scotia, as is reflected in the Saltwire article entitled

“Digging Keji - Archeological discoveries hint at Mi’kmaq lives going back six millennia” that is attached to this affidavit as **Exhibit B**. The mouth of the Mersey river is directly in the path of the proposed new sites.

13. Kelly Cove approached us and we agreed to have Kelly Cove make a presentation to our Band Members on April 15, 2022. The meeting was held in Milton, Queens County. Although the attendance was small, band members were very engaged and asked many questions to the representatives of Kelly Cove. All those present at the meeting were opposed to the expansion. Some members presented concerns regarding the negative impact that could occur to the lobster fishery. There were environmental concerns raised as well. Many were concerned of negative impacts to possible Archeology sites. It was during this meeting that Kelly Cove stated that they had never heard our concerns regarding Archeological impact. Although we raised the concerns with the Province they had not ever ordered an Archeological assessment or approached Kelly Cove regarding one. The Kelly Cove representatives agreed that they would take it upon themselves to have an Archeological assessment done.
14. You can see from the various records of meetings in **Exhibit A** that we repeatedly raised concerns about our FSC fishers being displaced by the expansion. This issue was never addressed satisfactorily. The Province said they had never heard of anyone being displaced by the existing operation taking place at Coffin Island. Could we offer evidence of that? We have over 300 band members living in Queens County. We have many FSC fishers in the area. There is no set number as our band list continues to grow. The Native Council of Nova Scotia also has a very large number of FSC fishers in the area. As I stated in the meetings, our members fishing for food are in small outboard boats and stay close to shore. They have three traps each and it would make no sense for them to go further from shore. The further away they fish from shore, the higher the fuel costs and increased risk for safety. Our members are typically in very small vessels that are not equipped to go far out to sea. The cost of buying larger boats is not an option for many of our members. Many of our women and younger fishermen are often alone in their boats and stay close to shore with someone watching from the shore for safety reasons. For example, non-Indigenous spouses/partners/parents are not permitted to assist and therefore for some it is necessary for them to go out in the boats alone. The proposed sites are significant and take up significant space at the mouth of the harbour and the area between the shore and Coffin Island. Based on my experience and knowledge of Acadia First Nation's fishing practices through my time as Councillor, and specifically as Councillor holding the fishing portfolio, it is my opinion that the new areas proposed in the applications along with the location of the existing operation are prime areas for those involved in food fishing.
15. We raised various concerns regarding sea lice and parasites. With the expansion comes greater risk of sea lice and parasites. I had read articles that said having a higher concentration of operations in one area poses increased risk and this prompted me to ask the question. The answer we received focused on this having never occurred here. That it had not been a problem in Nova Scotia. They remained focused on existing conditions from existing operations. They did not address how the cumulative risks might be higher if the operations increased in size in a concentrated area. They saw this just as a general concern and “unlikely” to cause “significant” harm to non-target populations. They did not explain what this meant in terms of actual risks to the species being harvested by our members. If in fact sea lice or other parasites were present in the area, how would that impact the lobster, eels and other species that our community

members eat? I believe if parasites were to occur at this site, this would directly impact our members' rights to exercise their fishing rights in that area. No one is going to want to fish in an area that could carry parasites. At the end of the discussion, I felt the answer was— "We will deal with it when the time comes but we don't think it will happen" and assurances that, if it did, proper Veterinarians would be called in. As Mi'kmaq, we must consider the interests of our current members and future generations. The Province's view that this contamination might not happen, and if it did happen, someone would try to fix it, was not adequate assurance, when compared to our potential losses.

16. Another concern raised was regarding non-compliance of the existing operations. In the meetings with the Province, I raised the fact that there were concerns in the community that previous Kelly Cove employees have spoken about the existing Kelly Cove operation not always following mandatory operating procedures. These are concerns that I have no first-hand knowledge of but rather concerns I have heard from reliable community members of Queens County. So I am wondering who ensures compliance of operations? I note that on page 3 of the Report on Outcomes of Consultation (that has been filed with the Board as **Exhibit 4**) it stated that in 2016 the Province identified a portion of the present AQ#1205 operating outside the bounds of its issued lease. How long did they operate outside the boundaries? We do not know but Kelly Cove submitted an application to expand the site in 2019. If this new expansion is granted, we are concerned how the Department will ensure they do not breach the boundaries again.
17. We raised concerns regarding elvers and glass eels. Would the expansion increase the likelihood of migrating eels and other fish encountering cages that could traumatize or kill smaller fish during this migratory journey? The only response we received was that limited literature was available on the subject. The Province did say they shared the concern. They thought the migratory fish would avoid the cages but if they did go in the cages it would likely lead to trauma or consumption. They stated they were not aware of any evidence of the eel population declining because of salmon farming, however, the Province did not mention whether there was any research or literature on the subject. It seems to me that this question has never been studied. We do not know the impacts. Elvers and eels are very significant to the Mi'kmaq in terms of both FSC fishing and MLF. The concerns raised around this need to be addressed. Scientific studies should be conducted. The Maritimes and South West Nova Scotia have one of the only healthy eel stocks in eastern Canada. There are reports that eel stocks are in trouble up the St. Lawrence River and the threat of them being placed on the SARA (Species at Risk) list is real, as is discussed in the Fisheries and Oceans Canada document entitled "The American Eel" that is attached as **Exhibit C**. We are worried that the increased area being proposed will place an unnecessary risk to the eel population in that river system.
18. Finally, you will note from the record of meetings in Exhibit A that the DFO was mentioned numerous times throughout the consultation process. Many questions that were raised fell within DFO's jurisdiction. For example, many questions were raised about the risks to fish and fish habitat such as the eel and lobster. We were told that it is the DFO's responsibility to comment on impacts to fish and fish habitat. That the Province takes their advice from DFO in this regard. We had even asked whether DFO could be brought to the table to address some of our concerns. We were never given an opportunity to meet or talk to DFO with regards to this application. We were never provided the document "DFO Maritimes Region Science Review of

the Proposed Marine Finfish Aquaculture Boundary Amendment and New sites, Liverpool Bay, Queens County, Nova Scotia” by either Kelly Cove or the Province. I do not recall receiving any information from the Province during our consultation sessions on what if any concerns were raised by DFO or any feedback and comments regarding fish and fish habitat. Nor did they provide DFO feedback or comments about the impacts to FSC or MLF fishing from the proposed application.


19. In conclusion, I felt the consultation process was flawed. I was frustrated from the beginning to the end. When information was presented, it was too technical. The Province did not use its internal expertise to explain the technical information to us in plain language. The Province did not identify any accommodations that it considered might reduce the risks we identified. In many cases, the Province acknowledged that the risks we were raising were real or were not well understood, but then showed no interest in mitigating those risks or gaining a better understanding of them. I felt that our concerns were not taken seriously. I believe that the records of meetings attached to this affidavit as Exhibit A support that conclusion.
20. I affirm this affidavit is in support of KMKNO’s intervention before the Aquaculture Review Board and for no other or improper purpose.
21. I was not physically present before Garnet Brooks when I affirmed this affidavit. I was linked with Garnet Brooks using video conferencing technology.

Affirmed before me by videoconference from)
Port Medway _____ (location of affiant) to)
Halifax _____ (location of lawyer taking)
oath) on the 18th day of January, 2024)
_____)
A Commissioner of Oaths in and for the)
Province of Nova Scotia)

_____)
Charmaine Stevens _____)

GARNET E. BROOKS
A Barrister and Solicitor of
the Supreme Court of Nova Scotia

This is **Exhibit "A"** mentioned and referred to in the affidavit of Charmaine Stevens affirmed before me on this 18th day of January, 2024



A Commissioner of Oaths in and for the
Province of Nova Scotia

GARNET E. BROOKS
A Barrister and Solicitor of
the Supreme Court of Nova Scotia

May 1, 2023

Twila Gaudet, Director of Consultation
Assembly of Nova Scotia Mi'kmaw Chiefs
Kwilmu'kw Maw-klusuaqn Negotiation Office
75 Treaty Trail,
Millbrook, NS
B6L 1W3

Dear Twila Gaudet;

**RE: Decision regarding Aquaculture Licence and Lease Application Nos. AQ#1205
AQ#1432, & AQ#1433 located in Liverpool Bay, Queens County**

I am writing to bring to your attention a decision that has been made on three aquaculture applications (AQ#1205, AQ#1432 and AQ#1433, the "applications") submitted by Kelly Cove Salmon Ltd. in connection with an adjudicative amendment to increase the site boundaries and two new aquaculture sites for the marine cage cultivation of Atlantic salmon in Liverpool Bay, Queens County.

This letter provides the following:

1. Chronology of consultation
2. How concerns/issues raised by the Mi'kmaq of Nova Scotia have been addressed

Chronology of Consultation To-Date

On September 25, 2019, the Nova Scotia Department of Fisheries and Aquaculture (the "Department") sent Offer to Consult letters to the Chiefs and Councils of the Assembly of Nova Scotia Mi'kmaq Chiefs (Acadia First Nation, Annapolis Valley First Nation, Eskasoni First Nation, Glooscap First Nation, L'sitkuk (Bear River), Membertou First Nation, Paqtnkek Mi'kmaw Nation, Pictou Landing First Nation, Potlotek First Nation, Wagmatcook First Nation, We'koqma'q First Nation), copying the KMKNO. The Department described the applications and noted the Province had screened it for Aboriginal consultation purposes and found it to potentially have impacts to Aboriginal and Treaty rights at the moderate level. The Department then requested details on potential adverse impacts the applications could have on credibly asserted or established Mi'kmaq Aboriginal and/or treaty rights. A response was required on or before November 25, 2019.

On November 22, 2019, a response was received from the KMKNO wishing to proceed with consultation. In the response, the KMKNO advised that local Mi'kmaq communities have

expressed significant concerns and oppose this aquaculture expansion. The KMKNO “strongly recommended that the above noted lease application(s) not be approved.”

On February 6, 2020, the Department sent a letter to the KMKNO to continue consultation. In the letter, the Department assessed and addressed the issues raised by the KMKNO in the previous letter dated November 22, 2019. In the letter, a website link to the development plans for all three applications was provided. The Department offered a meeting with representatives of the KMKNO and concerned Mi'kmaq harvesters to learn more about the potential interaction between the practice of Aboriginal and treaty rights and aquaculture in Nova Scotia. The Department also offered to meet in person for further consultation (specific to the applications). A response was required on or before March 6, 2020.

On March 5, 2020, a response was received from the KMKNO, wishing to proceed with a consultation meeting.

On December 9, 2020, Consultation Meeting #1 was held (virtually) with representatives from the Department, KMKNO, Acadia First Nation, Glooscap First Nation and Nova Scotia Office of L'nu Affairs (OLA, previously known as the Office of Aboriginal Affairs). Refer to Supplement #1 for a copy of the finalized record of this meeting.

On April 12, 2021, the OLA provided via e-mail a finalized record of meeting from the December 9, 2020 Consultation Meeting #1 to the KMKNO, Acadia First Nation, Glooscap First Nation and the Department.

On May 3, 2021, the Department sent a letter to the KMKNO to continue consultation. In the letter, the Department proposed that two individual meetings should be held: One meeting to further discuss the concerns regarding environmental impact and the other meeting to discuss the concerns regarding fish health and disease. No response was received by the KMKNO regarding this letter.

On July 16, 2021, the Department sent an e-mail to the KMKNO as a follow-up to the letter dated May 3, 2021. In the e-mail the Department identified how their actions would be addressed in the two proposed consultation meetings with dates suggested on August 10, 11 or 12, 2021. In addition, the Department asked to hear from Acadia First Nation on their progress from their action items. No response was received by the KMKNO regarding this email.

On August 30, 2021, the OLA sent an e-mail to the KMKNO as a follow-up to the two previous correspondences, indicating that no response had been received. In the e-mail the OLA asked the KMKNO to suggest times in September or early October for the proposed consultation meetings. Later the same day, the KMKNO responded that they will get back once they have a date range of availability from Acadia First Nation.

On September 24, 2021, the OLA sent an e-mail to the KMKNO as a follow-up to the three previous correspondences, indicating that no response had been received to schedule the next consultation meetings. The OLA requested an update on reaching out to Acadia First Nation.

On October 1, 2021, the KMKNO responded to the OLA via e-mail that Acadia First Nation was available in early October.

On October 4, 2021, the OLA responded to the KMKNO via e-mail that there is not enough time to arrange the meeting, given that it was already early October. On October 13, 2021, the OLA requested to the KMKNO via e-mail to meet November 24 and 26, 2021. If those dates were not feasible, the KMKNO were to provide dates for December. No response was received by the KMKNO regarding this e-mail.

On November 23, 2021, the OLA sent a follow-up email to the October 13, 2021 e-mail sent to the KMKNO, requesting the best way to proceed with consultation on these applications.

On January 18, 2022, the Department sent a letter to the KMKNO to continue consultation on the applications. The Department stated that, since the December 9, 2020 consultation meeting on this file, KMKNO and Acadia First Nation had not reciprocated the Department's efforts to re-engage in consultation. Section 9.e. of the August 31, 2010 Mi'kmaq-Nova Scotia-Canada Consultation Terms of Reference stresses the importance of timeliness to the consultation process, stating that "reasonable time" be given "to consider and discuss the information, having regard to any time constraints". The Department reminded the KMKNO that the network review process had been completed and the applications were ready for submission to the Aquaculture Review Board ("ARB"). The Department also stated that jurisprudence directs Parties not to "frustrate" the consultation process. Moreover, governments have a duty to balance Indigenous interests with those of the wider society. For these reasons, the Department made a final offer to continue consultation on the above applications by requesting the availability of the KMKNO and Acadia First Nation for two virtual meetings between February 28 and March 11, 2022. A response was requested by February 4, 2022. Another copy of the record of meeting from December 9, 2020 was included with the letter. Following responses from the KMKNO, the Parties agreed to a virtual consultation meeting on March 1 and 2, 2022.

On March 1, 2022, Consultation Meeting #2 was held (virtually) to discuss concerns related to fish health. Attending the meeting were representatives from the Department, KMKNO, Acadia First Nation, Transport Canada and OLA. Refer to Supplement #2 for a copy of the finalized record of this meeting.

On March 2, 2022, Consultation Meeting #3 was held (virtually) to discuss concerns related to the environment. Attending the meeting were representatives from the Department, KMKNO, Acadia First Nation and OLA. Refer to Supplement #3 for a copy of the finalized record of this meeting.

On May 4, 2022, the OLA provided via e-mail a finalized record of meeting from the March 1, 2022 Consultation Meeting #2 and the March 2, 2022 Consultation Meeting #3 to the KMKNO, Acadia First Nation, Glooscap First Nation and the Department.

On June 1, 2022, Consultation Meeting #4 was held (virtually) to provide a status update on the project, follow up on action items from the March 1 and March 2, 2022 consultation meetings and to discuss concerns and potential impacts to Treaty and Aboriginal rights resulting from the proposed project. Attending the meeting were representatives from the Department, KMKNO, Acadia First Nation, CCTH and OLA. Refer to Supplement #4 for a copy of the finalized record of this meeting. During the meeting, Acadia First Nation and the KMKNO raised concerns over shoreline appearance and tourism value, loss of traditional and current fishing space for Food, Social & Ceremonial (FSC) fishers who are unable to locate elsewhere, fish health and environmental disturbances.

On June 16, 2022, a response was received from the KMKNO as a follow-up to the June 1, 2022 Consultation Meeting (#4). In the letter, the KMKNO strongly recommended that a full Archaeological Resource Impact Assessment (ARIA) be carried out prior to any decision by the Aquaculture Review Board (ARB) and that any such investigation be developed collaboratively with the Mi'kmaq. The KMKNO wrote that the Mi'kmaq and their ancestors have occupied Liverpool Bay since time immemorial and have fished lobster, cod, mackerel among other species. The KMKNO wrote that the submerged shorelines represent areas of elevated archaeological potential for Precontact Mi'kmaw cultural heritage. In the letter, the KMKNO reiterated the request that a full Archaeological Resource Impact Assessment (ARIA) be carried out prior to a decision by the Aquaculture Review Board (ARB).

On November 23, 2022, the Department sent a letter to the KMKNO to continue consultation on the applications. The Department provided the list of action items resulting from the June 1, 2022 Consultation Meeting (#4). A finalized record of meeting from the June 1, 2022 Consultation Meeting (#4) was included with the letter. The Department indicated in the letter that, apart from action item #1, the Department had received no follow-ups with respect to action items from the June 1, 2022 meeting. The Department noted that more than 5 months had elapsed since that meeting and would like to move forward with sending the applications to the ARB for a decision. The Department requested that the KMKNO provide an update on the action items numbered 2 – 7 resulting from the June 1, 2022 consultation meeting. The Department requested a response within 30 days. If feedback was not received within 30 days, the Department would consider consultation to be concluded.

On November 30, 2022, a response was received from the KMKNO, requesting additional time to review the ARIA provided by the proponent (Kelly Cove Salmon Ltd.), stating “This would ensure that we are providing accurate feedback/concerns prior to any application approvals.”

On December 14, 2022, a response was received from the KMKNO. The KMKNO responded to action item #4 from the June 1, 2022 Consultation Meeting, stating “We reiterate that there remains concerns in providing that information. This is an ongoing exercise.” The KMKNO responded to action item #5 from the June 1, 2022 Consultation Meeting, stating “Providing Kelly Cove with more room to farm their fish, means less area for the Mi'kmaq to fish. This clearly impedes the Mi'kmaw right to fish for food, social and ceremonial purposes as well as for moderate livelihood. Displacement has been brought up numerous times during our meetings and the loss of an archaeological site or artifact is an irreversible loss to Mi'kmaq history and culture.” The KMKNO reiterated their concern regarding underwater archaeological resources, stating that “the full ARIA should be completed, and the results reviewed by the ARD, prior to the conclusion of consultation. Recognition from the Province of the cultural significance of the submerged landscape of Liverpool Bay to the Mi'kmaq would be a step towards building the trust required for sharing information on fishing activities in the area.”

How Concerns/Issues Raised by the Mi'kmaq of Nova Scotia Have Been Addressed

Issue #1: Aquaculture facility waste

The KMKNO raised the following issue in the letter to the Department dated November 22, 2019: *“Research has demonstrated that aquaculture facility waste and uneaten feed can destroy the bottom of the ocean floor and coastal eco systems with toxic slug by covering up to one meter in depth that will take away optimal fish habitat and impact water quality.”*

The Department assessed this issue and considered this to be a general concern regarding the aquaculture process where a connection between the contemplated decision and a potential negative impact to an established or asserted Aboriginal or Treaty right was not clear. On February 6, 2020, the Department responded to this issue:

“Although some excess food and fish waste from the site will settle on the seafloor, not all will cover the bottom directly under the marine cages as there is natural flushing at the site that will disperse the waste throughout the water column. In addition, fallow periods will ease the effects of excess waste by allowing for gaps in the production periods. As required by the Nova Scotia Department of Fisheries and Aquaculture, the Environmental Monitoring Program (EMP) focuses on the benthic marine habitat in the immediate vicinity of the aquaculture site. This initiative assesses the organic loading beneath and around areas of aquaculture production. Furthermore, under the Federal Aquaculture Activities Regulations (AAR) Program, the operator cannot restock a site until the sediment under the cages is under an acceptable threshold.

As part of the application process for new finfish sites proponents are required to develop site-specific depositional simulations using proven modelling methods. These simulations calculate the estimated rate of deposition of biochemical oxygen demanding material such as feed and fish excretions on the seafloor under and around the proposed facility at various stages in the production cycle.

These are examples of initiatives that will help mitigate the impact of aquaculture wastes on fish and fish habitat around marine aquaculture sites.”

In addition, the Department offered a meeting with representatives of the KMKNO and concerned Mi'kmaq harvesters to learn more about the potential interaction between the practice of Aboriginal and treaty rights and aquaculture in Nova Scotia.

This issue was discussed during Consultation Meeting #1 and #3.

The Department has determined that this issue raised is general in nature and not specific to the proposed activities identified by the applicant. In addition, the Mi'kmaq of Nova Scotia did not clearly indicate how this issue is related to asserted and established aboriginal rights. As such, no accommodation or mitigation measures will be recommended to the Aquaculture Review Board for this issue raised.

Issue #2: Parasites and sea lice, antibiotics

The KMKNO raised the following issue in the letter to the Department dated November 22, 2019: *“The higher concentration of fish in the pens allow for easier transfer of parasites and sea lice and can harm wild stocks that swim past the site. Release of antibiotics in feed or some chemical baths for sea lice can harm or kill ground fish such as lobster.”*

The Department assessed this issue and considered this to be a general concern regarding the aquaculture process where a connection between the contemplated decision and a potential negative impact to an established or asserted Aboriginal or Treaty right was not clear. On February 6, 2020, the Department responded to this issue:

*“Salmon lice or *Lepeophtheirus salmonis*, can be an issue in some salmon growing locations in the world, however, salmon lice have not been an issue in the Liverpool area. Veterinary records are maintained for seven (7) years and during that time of operation of the current Liverpool farm, no sea lice treatments have been performed. All marine finfish farms monitor for salmon lice and must report if thresholds for treatment are met, which to date, they have not met the thresholds for treatment. There are two approved products by Health Canada for sea lice treatments (Hydrogen peroxide and azamethiphos). These products, if used, are unlikely to persist in the environment and, if used as per Health Canada’s Pest Management regulatory guidelines, is unlikely to cause significant harm to any non-target populations.*

The use of antibiotics at marine salmon farms is not a common practice in Nova Scotia. If treatments were to be performed, they would only be done so following the standard of culturing the bacteria of concern first, determining the antibiotic it is sensitive to, and then prescribing an approved antibiotic. Antibiotics can only be prescribed by a licenced veterinarian and must be used in accordance with Government Regulations. In the past seven (7) years of operation of the current salmon farm in Liverpool, no antibiotic treatments have occurred.”

In addition, the Department offered a meeting with representatives of the KMKNO and concerned Mi’kmaq harvesters to learn more about the potential interaction between the practice of Aboriginal and treaty rights and aquaculture in Nova Scotia.

This issue was discussed during Consultation Meeting #1 and #2. During Consultation Meeting #4, the KMKNO agreed to follow-up with the Department on whether or not another technical session on fish health was required (action item #2). Acadia First Nation agreed to follow-up with the Department with questions from the community regarding fish health (action item #3). No response was provided by the KMKNO with respect to action item #2. No response was provided by Acadia First Nation with respect to action item #3.

The Department has determined that this issue raised is general in nature and not specific to the proposed activities identified by the applicant. In addition, the Mi’kmaq of Nova Scotia did not clearly indicate how this issue is related to asserted and established aboriginal rights. As such, no accommodation or mitigation measures will be recommended to the Aquaculture Review Board for this issue raised.

Issue #3: Oxygen

The KMKNO raised the following issue in the letter to the Department dated November 22, 2019: *“When there is an increase in temperature or salinity, less oxygen will be dissolved, and when fish increase in size the amount of oxygen, they consume increases.”*

The Department assessed this issue and considered this to be a general concern regarding the aquaculture process where a connection between the contemplated decision and a potential negative impact to an established or asserted Aboriginal or Treaty right was not clear. On February 6, 2020, the Department responded to this issue:

“Part of the scoping activity that an Operator must perform is to monitor the biophysical parameters of the marine environment over a period of time prior to developing a farm. During this monitoring period, the values for dissolved oxygen are recorded, and evaluated. Only if the biophysical parameters of the area indicate that it will be a good cultivation area, will the lease area be considered for farming.

The proponent follows the guidelines and procedures outlined in the Nova Scotia Department of Fisheries and Aquaculture’s EMP Framework and Standard Operating Procedures for each of their marine sites.

The proponent also uses environmental probes that are installed on their cages, which sends a constant stream of information to the operators regarding temperature and dissolved oxygen in real time. Feed operators are trained in feeding practices which includes fish behavior observations using underwater camera technology, and other environmental sensors used to monitor water quality conditions (oxygen, temperature). These tools allow the feed operators to manage feeding rates to minimize waste and maximize fish growth.

An operator must provide contingency plans in their Farm Management Plan (FMP) in the event that there is an abnormal event of low dissolved oxygen. To ensure the health and welfare of the animals at the farm, the farmer must employ a strategy to mitigate the issue of a low oxygen event if it were to occur.”

In addition, the Department offered a meeting with representatives of the KMKNO and concerned Mi’kmaq harvesters to learn more about the potential interaction between the practice of Aboriginal and treaty rights and aquaculture in Nova Scotia.

This issue was discussed during Consultation Meeting #1.

The Department has determined that this issue raised is general in nature and not specific to the proposed activities identified by the applicant. In addition, the Mi’kmaq of Nova Scotia did not clearly indicate how this issue is related to asserted and established aboriginal rights. As such, no accommodation or mitigation measures will be recommended to the Aquaculture Review Board for this issue raised.

Issue #4: Protection of wild stocks from sea lice

The KMKNO raised the following issue in the letter to the Department dated November 22, 2019: *“As juvenile smolts have to travel out to sea, passing the existing salmon sea cages can have an impact on their health and may result in no return. With the continued decline of wild stocks, the importance of protecting the wild stocks that enter the rivers where community members fish for Food Social and Ceremonial (FSC) purposes is a priority. Sea lice can kill juvenile fish even at low infestations levels.”*

The Department assessed this issue and considered this to potentially threaten established and asserted Mi'kmaw Aboriginal and treaty rights. On February 6, 2020, the Department responded to this issue:

“All marine salmon farms must monitor for sea lice levels according to the Farm Management Plan (FMP). Treatments, if they were to occur, would only be done so after consultation with a licensed veterinarian. As noted previously, sea lice have not historically been an issue in this area, and no sea lice treatments have been performed over the past seven (7) years because lice thresholds were not observed.”

The Department also offered to meet in person for further consultation.

This issue was discussed during Consultation Meeting #1 and #2. During Consultation Meeting #4, the KMKNO agreed to follow-up with the Department on whether or not another technical session on fish health was required (action item #2). Acadia First Nation agreed to follow-up with the Department with questions from the community regarding fish health (action item #3). No response was provided by the KMKNO with respect to action item #2. No response was provided by Acadia First Nation with respect to action item #3.

The Department has determined that, due to a lack of specificity, this issue raised is general in nature and not specific to the proposed activities identified by the applicant. As such, no accommodation or mitigation measures will be recommended to the Aquaculture Review Board for this issue raised.

Issue #5: Fish Escape

The KMKNO raised the following issue in the letter to the Department dated November 22, 2019: *“Escape farmed fish will compete with the wild stocks for food and weaken local gene pools. Cross breeding with escape fish will weaken wild stocks and potentially take out wild stocks, attack native species and transmit disease.”*

The Department assessed this issue and considered this to be a general concern regarding the aquaculture process where a connection between the contemplated decision and a potential negative impact to an established or asserted Aboriginal or Treaty right was not clear. On February 6, 2020, the Department responded to this issue:

“The proponent has outlined their strategy to mitigate the risk of a site breach and has identified their containment management strategies in the Development Plan. Further requirements to safeguard against escapes must be outlined in the company's Farm Management Plan prior to stocking any new sites. Regarding disease interactions, please see response below.”

In addition, the Department offered a meeting with representatives of the KMKNO and concerned Mi'kmaq harvesters to learn more about the potential interaction between the practice of Aboriginal and treaty rights and aquaculture in Nova Scotia. This issue was discussed during Consultation Meeting #1.

The Department has determined that this issue raised is general in nature and not specific to the proposed activities identified by the applicant. In addition, the Mi'kmaq of Nova Scotia did not clearly indicate how this issue is related to asserted and established aboriginal rights. As such, no accommodation or mitigation measures will be recommended to the Aquaculture Review Board for this issue raised.

Issue #6: American Eel

The KMKNO raised the following issue in the letter to the Department dated November 22, 2019: *“The American eel has great cultural significance to the Mi'kmaq people and as we know, the eels must migrate from freshwater streams/rivers/lakes to the ocean to spawn. As the eels migrate to the ocean and travel past these open water aquaculture facilities they could potentially be in contact with disease and parasites. Similarly this would be the case when the small juvenile eels migrate back from the ocean to the freshwater.”*

The Department assessed this issue and considered this to potentially threaten established and asserted Mi'kmaq Aboriginal and treaty rights. On February 6, 2020, the Department responded to this issue:

*“Eels, like all species of fish, have certain pathogens and parasites that can affect their health. Most pathogens and parasites of one species do not affect another species, however some may. For example, sea lice specific to salmon, known by its scientific name as *Lepeophtherius salmonis*, do not affect eels. In general, growing conditions at fish farms are managed to decrease risk of pathogen and parasites and negative impacts to wild fish and vice versa, the impacts of pathogens from wild fish to farmed fish. These conditions are inherently beneficial to the farm and increase fish growth and survival. As well, maintenance of fish health is regulated through several federal and provincial Acts and Regulations including: the Canadian Food Inspection Agency's Health of Animal Act and Regulation, Fisheries and Oceans Fisheries General Regulations and Aquaculture Activities Regulations and the Province's Fisheries and Coastal Resources Act and Aquaculture Management Regulations.”*

The Department also offered to meet in person for further consultation. This issue was discussed during Consultation Meeting #1.

The Department has determined that, due to a lack of specificity, this issue raised is general in nature and not specific to the proposed activities identified by the applicant. As such, no accommodation or mitigation measures will be recommended to the Aquaculture Review Board for this issue raised.

Issue #7: Impacts on local FSC fisheries

In the December 9, 2020 meeting (Consultation Meeting #1), the KMKNO, Glooscap First Nation and Acadia First Nation raised the following issue:

“Were FSC fisheries and fishers in the area identified and engaged during the scoping phase? Impacts on FSC fisheries around the expansion area are of concern to the Mi’kmaq on Nova Scotia”

The Department provided the following response during the meeting:

“DFO [Department of Fisheries and Oceans Canada] evaluates the types of fisheries undertaken in the proposed project area, including commercial and Aboriginal fisheries. NSDFA networks with DFO on commercial fisheries but not Aboriginal (FSC and livelihood) fisheries, thus the consultation and engagement processes. NSDFA is also interested in hearing specific concerns about potential adverse impacts on local FSC fisheries from the Mi’kmaq during the consultation process – at this table. NSDFA asks who at Acadia First Nation the department could contact to discuss local FSC activities. Curtis identified himself as being able to meet with the applicant and connect the applicant to other Mi’kmaq fishers in the area.”

In the March 2, 2022 meeting (Consultation Meeting #3), discussion continued regarding the issue raised:

- The OLA suggested this might be a good opportunity to continue the conversation using a map to help guide the location of fishing activities. OLA noted it recognizes the sensitivity around any location-specific information provided but underscored the importance of the information to demonstrating traditional use in the area.
 - The KMKNO noted that the food fishery is not static, adding there is often movement.
 - Acadia First Nation noted that the project as proposed would be taking away some areas where fishing could occur safely.
- The OLA asked for Acadia First Nation to provide some additional details on fishing activities undertaken by community members.
 - Acadia First Nation noted that lots of fishing occurs in Liverpool Bay itself - people fish all along the Bay and if they are not catching in one place, they move along to another.
 - Acadia First Nation further explained that food fishery boats are small vessels with only 1 or 2 people on board, adding that any time a company takes up more ocean bottom, that is another area where community members can't fish.
 - Acadia First Nation noted that the community has 1500 - 1600 Band members – in Queens County it has 300 or 400 members and that the membership list growing.
 - Acadia First Nation explained that Coffin Island is an area of importance to the Mi’kmaq and that it has been for hundreds of years, adding that community members have fish shacks there.
 - Acadia First Nation community members noted personal experience fishing in the area.
 - Acadia First Nation underscored their perspective that the proposed expansion will impede the community's FSC and moderate livelihood fisheries “without question”.

- The Department asked about specific impacts on First Nations fisheries and that it would be helpful for the Department to understand better what that means.
 - The KMKNO stressed it may not be able to be communicated more clearly than what has already been said. The KMKNO added that the Mi'kmaq have continued to move and change where they fish because of obstacles - fishers have been flexible - aquaculture in this area has already changed how they fish.
 - KMKNO underscored that this application needs to be carefully considered by regulators - the Mi'kmaq have been displaced and need to fish around the existing site already.
- Acadia First Nation noted that it provided some rough numbers at yesterday's meeting (approximately 30 community members participate in FSC fishery and those numbers are growing) - numbers of fish tags issued in area - that was minimum fishing in that area, adding that Acadia First Nation was describing the summer fishery in that example - when lobsters come inshore (not in winter when the larger commercial fishery is undertaken).
- Acadia added that more fishing happens in skiffs - the Mi'kmaq employ a practice called "hooping" in the area - it may not be apparent to others that fishing has been in the area given that traps are not used.
- The Department noted that their staff had observed FSC fishing in areas surrounding the sites and asked if the presence of aquaculture sites could actually be of benefit to Mi'kmaq fisheries in the area.
 - Acadia First Nation did not have any information to support this observation.
 - Acadia First Nation added that NCNS gives out a lot of food fishing tags in area as well.

In the June 1, 2022 meeting (Consultation Meeting #4), the OLA added that they are unable to access information on licences from DFO but that the Province needs information to help government understand the potential specific impacts due to the proposed project expansions. The OLA asked for numbers of community members fishing in the specific areas slotted for expansion and if an in-depth conversation on those issues would be possible. The KMKNO noted that the number of community members fishing in the area isn't relevant, adding that the Mi'kmaq have continued to be displaced because of commercial fisheries and that the Mi'kmaq have continued to move along, using small vessels, close to shore. KMKNO stressed that it could be 5 members or 500 members - they still have a treaty right to fish. The KMKNO noted they understand that more specificity is required and suggested that DFO data could be a starting point. Acadia First Nation explained that this was discussed at the meeting with Kelly Cove, adding that in Queens County they have well over 300 Acadia Band members but that there are so many more beyond that. The Native Council of Nova Scotia (NCNS) also has a huge presence in that area. Acadia First Nation further explained that many band members engage in lobster fishing in area - for food fishing (3 tags each) plus moderate livelihood which is growing as it becomes sanctioned by DFO. Acadia First Nation noted that the area is very accessible and close to the shore for the small food fishery vessels. Acadia First Nation repeated serious concern for the displacement of fishers given the large project area which almost takes up the whole coastline of Coffin Island. Acadia First Nation noted there is a food fishery in the area around Coffin Island and that commercial fisheries are located there as well.

Acadia First Nation explained there is a district approach to moderate livelihood fisheries - 3 other bands are involved. There will be access for Bear River, Annapolis and Glooscap in Area 33.

Access in LFA 33 will grow to include other members of Mi'kmaw communities. Gaspereau and elver fisheries are also being expanded through moderate livelihood and the community anticipates more cooperation in this part of the province. The Department explained that the maps brought in for the March, 2022 meetings show the lease areas put forward by the proponent but that they do not reflect actual footprint of pens in water, adding there is a big difference between actual space occupied by pens and gear and size they are requesting in their application. The Department added that the proponent is also asking for buffers to hold nets in place - in a space that more than accommodates gear. The Department shared that operators allow people to fish within boundaries of their lease right up to the cages, adding that departmental staff have observed lobster traps set around pens. The Department stressed that they rely heavily on advice from federal partners, adding that DFO's responsibility is to comment on impacts to fish and fish habitat and that they rely on DFO for advice on impacts to FSC, moderate livelihood and commercial fisheries in the area.

The Department reminded Parties about the project tracking lobsters in vicinity of fish farms, suggesting that it might be worth talking about the latest findings. The Department explained that it looks at the impacts of aquaculture on lobster and added that there is no evidence of decrease in landings at this time. The Department stressed the importance of specificity: they need to know how what's being proposed here would prevent fishers from accessing the resource and if reasonable accommodations can be developed to mitigate any potential loss. The Department reiterated the importance of learning where the best/most productive fishing is done, suggesting that maybe one or more of the proposed sites is actually better for expansion. The Department stressed the need to balance interests with other groups.

During Consultation Meeting #4, the KMKNO agreed to provide the Department with information on what species are being fished, where fishing occurs and how many community members would be impacted, how the project would prevent fishers from accessing the resource and if reasonable accommodations can be developed to mitigate any potential loss, within the immediate area of the project (action item #4). During Consultation Meeting #4, the KMKNO agreed to touch base with Mi'kmaw on providing a map to ascertain what fishing happens in the proposed areas (action item #6). No response was provided by the KMKNO with respect to action item #6.

On December 14, 2022, the KMKNO sent a letter to the Department which contained a response to action item #4 as follows: *"We reiterate that there remains concerns in providing that information. This is an ongoing exercise."* In addition, the KMKNO stated that *"Providing Kelly Cove with more room to farm their fish, means less area for the Mi'kmaq to fish. This clearly impedes the Mi'kmaw right to fish for food, social and ceremonial purposes as well as for moderate livelihood."*

The Department has determined that, due to a lack of specificity, this issue raised is general in nature and not specific to the proposed activities identified by the applicant. As such, no accommodation or mitigation measures will be recommended to the Aquaculture Review Board for this issue raised.

Issue #8: Underwater Archaeological Resources

In the March 2, 2022 meeting (Consultation Meeting #3), the KMKNO asked if any underwater archaeological work had been undertaken to date. The Department noted that no significant concerns were raised by Communities, Culture, Tourism and Heritage (“CCTH”) during the review process but that CCTH advised that if any heritage resources were discovered that the operator should contact the Special Places Coordinator.

During the meeting, Acadia First Nation noted that there are 10,000 years of recorded artifacts through Mersey corridor and that the area is of high importance to the Mi’kmaq. Acadia First Nation added that underwater archaeology would be important in that area given the area is of such high importance. The Department clarified that no survey was done - CCTH reviewed and suggested that the Department asks that operators notify Special Places Coordinator if heritage resources were encountered. The Department noted that they welcome any specific information that would counter CCTH’s advice.

During the meeting, the KMKNO ARD noted that the paleontological information does not necessarily relate to archaeology (referencing information from the development plan). The Department stated that they would follow up with CCTH to ensure nothing was missed in their assessment (the results were discussed in the June 1, 2022 consultation meeting as indicated further below).

During the meeting, the KMKNO ARD flagged the high risk nature of the area in terms of archaeology - approximately one quarter of all known Mi’kmaq archaeological sites in Nova Scotia are on the Mersey River - the Mersey was an exceptionally important travel route for the Mi’kmaq. They added that shorelines are not currently as they were in the past - could have been dry land in the past that supported human life. They asserted that the project area is extremely high risk and recommends an ARIA be completed. They noted that there is archaeology on the river itself in addition to on the Island so in between wouldn’t be a surprise if resources were located in and around the project site. The KMKNO ARD asserted that the project area is extremely high risk and recommends an ARIA be completed.

In the June 1, 2022 meeting (Consultation Meeting #4), CCTH informed the KMKNO and Acadia First Nation that no official assessment has been undertaken to date, adding that the background information presented was helpful. CCTH stated that their examination of the application in these areas yielded information on shipwrecks and pre-contact site on Coffin Island - supporting the Mi’kmaq position that limited current knowledge does not preclude the existence of additional sites - and adding that CCTH understands the Mi’kmaq connection to the Mersey system. CCTH noted that they are still considering the project area as having a high energy subsurface environment and sandy floors. The Department agreed to consider the request by KMKNO ARD to completing an ARIA for the project area.

The proponent, Kelly Cove Salmon Ltd., on its own volition, decided to conduct a Phase I ARIA (desktop exercise) on the proposed areas of expansion. The Department is aware that the KMKNO had already received a copy of the Phase I ARIA report from the proponent.

On December 14, 2022, the KMKNO sent a letter to the Department which reiterated the concerns raised by the KMKNO regarding underwater archaeological resources. The KMKNO stated that

“Kelly Cove Salmon Limited’s decision to proceed with an Archaeological Resource Impact Assessment (ARIA) followed concerns raised by representatives of Acadia First Nation, during an April 2022 community engagement session, rather than at the direction of the province. KMKNO recognizes the Proponent’s proactive approach in acknowledging that aquaculture operations have the potential to impact submerged archaeological resources.

As a desk-based screening, the archaeological assessment of the Liverpool Bay aquaculture sites displays a number of strengths, including the manner in which it takes into account Holocene environmental conditions, modern bathymetric data, and postglacial coastlines in examining archaeological potential within the study area. As stated in the report, “the coastline has evolved significantly through time and the coastal orientation of precontact archaeological sites must be considered in light of the changing configuration” (Boreas 2022: 10,35).

The Archaeology Research Division (ARD) of KMKNO supports the recommendation that high potential areas (HPA-01 & HPA-02) “be subjected to subsurface archaeological sampling probes” prior to any disturbance (Boreas 2022: 42). The Maw-lukutijik Saqmaq (Assembly of Nova Scotia Mi’kmaw Chiefs) expects a high level of archaeological diligence, with evidence-based decisions grounded in an understanding of subsurface environmental data adequate to eliminate concern for the presence, protection, and management of Mi’kmaw archaeological and cultural heritage, in advance of any development. “Any potential need for further archaeological assessment or mitigation will be based on the results of this subsurface investigation” (Boreas 2022: 38).

The ARD’s primary concern with respect to the archaeological report, as submitted, is with its titling as an ARIA. An ARIA should properly consist of both a desktop assessment (background screening) and field reconnaissance. According to the Nova Scotia Department of Communities, Culture, Tourism and Heritage’s ARIA (Category C) Guidelines, “In designing an [ARIA], the following components should be addressed: 1. Background research... 2. Field strategy”. The Liverpool Bay report acknowledges this deficiency, on more than one occasion, by describing the desktop assessment as “the first phase of the ARIA” (Boreas 2022: 1,5). The report further states that the assessment was restricted to a desk-based screening “so that an appropriate field component strategy can be devised” (Boreas 2022: 1). However, the submission of the report as an ARIA, to both the Proponent and the provincial regulator, risks setting the precedent that underwater archaeological assessments need not be held to the same standard as terrestrial ARIAs. As such, the ARD disagrees with the recommendation that portions of the assessment area “be cleared of any requirement for further archaeological investigation [and that] development within these areas may proceed as planned” (Boreas 2022, 42), without some form of prior visual reconnaissance, as a primary data tool, such as remote sensing or direct diver survey.

It is KMKNO’s understanding that Kelly Cove Salmon intends to proceed with the field component phase of the Liverpool Bay ARIA, including subsurface archaeological sampling probes. We stand firm in our position that the full ARIA should be completed, and the results reviewed by the ARD, prior to the conclusion of consultation. Recognition from the Province of the cultural significance of the submerged landscape of Liverpool Bay to the Mi’kmaq would be a step towards building the trust required for sharing information on fishing activities in the area.”

On March 15, 2023, the proponent provided the Department with a copy of the Phase II ARIA report (field component). The proponent informed the Department that a copy of the Phase II

ARIA was also shared with Acadia First Nation and the KMKNO. The report concluded that development in the affected areas could proceed without further need of archaeological investigation. CCTH received and reviewed the report on work conducted related to the Phase II ARIA and accepted the conclusions.

Having reviewed all pertinent information, the Department has concluded that the issue raised regarding impacts to submerged Mi'kmaw archaeological resources is speculative in nature. Nonetheless, in terms of accommodation or mitigation measures in connection with this issue, consistent with advice provided by CCTH, which is responsible, under authority of the Special Places Protection Act, for the protection of archaeological sites in Nova Scotia, a recommendation will be made to the Aquaculture Review Board that the site operators be required to contact CCTH's Coordinator of Special Places in the event that any artifacts are encountered by the operators at the site.

Since mid-2021, the Department and collaborators from Kwilmu'kw Maw-klusuaqn (KMK); CCTH; Office of L'nu Affairs (OLA); and the Centre for Marine Applied Research (CMAR) have met to discuss, develop and finalize an archaeological procedure for aquaculture licence holders. The intent is for the procedure to be included in a licence holder's Farm Management Plan to proactively provide guidance should they encounter archaeological materials during the operation of their site(s). CCTH is also currently compiling educational materials related to archaeology that will be provided to licence holders to ensure a consistent knowledge base in the industry. Communications to licence holders will take place regarding the archaeology procedure implementation and educational materials once the latter is finalized.

Issue #9: Tourism

In the March 2, 2022 meeting (Consultation Meeting #3), Acadia First Nation questioned the visual impact to users of the area and tourism. The Department explained that they have engaged with Tourism Nova Scotia who have conveyed that the presence or absence of aquaculture has not impacted tourist's stays in Nova Scotia to date. The Department expressed a willingness to consider opposing views and invited comment from the group.

The Department has determined that this issue raised is general in nature and not specific to the proposed activities identified by the applicant. In addition, the Mi'kmaq of Nova Scotia did not clearly indicate how this issue is related to asserted and established aboriginal rights. As such, no accommodation or mitigation measures will be recommended to the Aquaculture Review Board for this issue raised.

The Department has made the decision to proceed with processing the above applications. The final decision regarding these applications will be made by the Aquaculture Review Board and posted to the department's website.

Sincerely,



Robert Ceschiutti
Manager of Licensing and Leasing
Nova Scotia Department of Fisheries and Aquaculture

Encl.

Cc.

Tamara Young, Consultation Researcher
Kwilmu'kw Maw'klusuaqn Negotiation Office

Kendra Gorveatt, Consultation Advisor
Nova Scotia Office of L'nu Affairs

Lynn Winfield, Licence Coordinator
Nova Scotia Department of Fisheries and Aquaculture

Edward Parker, Regional Senior Aquaculture Management Officer
Fisheries and Oceans Canada

Gabriella Arsenault, Consultation Officer
Transport Canada

Supplement #1: Record of Consultation Meeting of December 9, 2020
(6 pages)

RECORD OF MEETING

Consultation between the Assembly of Nova Scotia Mi'kmaq Chiefs and the Province of Nova Scotia – Department of Fisheries and Aquaculture Under the 2010 Mi'kmaq-Nova Scotia-Canada Consultation Terms of Reference

Aquaculture Lease and Licence Application Nos. 1205, 1432 and 1433 – Liverpool Bay – Kelly Cove Salmon

December 9, 2 – 4 pm
Microsoft Teams

Mi'kmaq of Nova Scotia: Twila Gaudet, Tamara Young, Mise'l Abram, Patrick Butler, Gerard Francis (KMKNO), Charmaine Stevens (Acadia FN), Curtis Falls (Acadia FN), Gail Tupper (Glooscap FN)

Department of Fisheries and Aquaculture: Bruce Hancock, Robert Ceschiutti, Nathaniel Feindel, Danielle St. Louis, Dr. Roland Cusack, Lynn Winfield, and Melinda Watts

Office of Aboriginal Affairs: Claire Rillie, Kendra Marshman

PURPOSE

The purpose of this consultation meeting is:

1. To provide information about three proposed aquaculture applications (AQ 1205, 1432 and 1433) for the marine cultivation of Atlantic Salmon in Liverpool Bay.
2. To provide a status update on the project.
3. To discuss concerns and potential impacts to Treaty and Aboriginal rights resulting from the proposed project.

AGENDA

1. Opening Prayer (Optional)
2. Introduction (KMKNO)
 - Roundtable
 - NSDFA provided introductory remarks noting that aquaculture regulations have changed and that a considerable amount of time has passed since significant finfish applications have come through.
 - NSDFA reiterated a desire for the Mi'kmaq to set the pace on this consultation –and expressed a desire to keep lines of communication open so everyone has good understanding of project and impacts.

3. Consultation Update (OAA)
 - Consultation on these applications was initiated by NSDFA via written correspondence on September 25, 2019.
 - KMKNO responded in writing on November 22, 2019 voicing opposition to the expansion plan and noting concerns related to the proposed applications. Concerns included:
 1. potential for damage to the ocean floor and coastal ecosystems due to waste generated by fish farms;
 2. possible ill effects from parasites, use of antibiotics and changes in water temperature and salinity; and
 3. other challenges related to escaped farmed salmon on wild populations of salmon and American eel.
 - On February 6, 2020, NSDFA responded to the concerns outlined in KMKNO's November letter, noting measures in place to decrease the risk of pathogens and stating that sea lice have not historically been an issue in the Liverpool Bay area. NSDFA suggested a meeting with KMKNO to enable a discussion that would help the department better understand the connection between the contemplated applications and potential adverse impacts to Aboriginal and/or treaty rights.
 - KMKNO responded in March of 2020, providing contact information and agreeing to a meeting.

4. Overview of the Aquaculture Application Process (NSDFA)
 - NSDFA began their presentation by noting there are two kinds of decisions – adjudicative application review process and administrative decisions (please refer to the presentation materials provided for further detail).
 - KMKNO, Glooscap First Nation, and Acadia First Nation raised several questions, including:
 1. How does NSDFA evaluate how adequately the applicant has engaged the Mi'kmaq of Nova Scotia during the scoping process?
 2. Were FSC fisheries and fishers in the area identified and engaged during the scoping phase? Impacts on FSC fisheries around the expansion area are of concern to the Mi'kmaq on Nova Scotia.
 3. What is the function and composition of the Aquaculture Review Board (ARB)?
 - How are pathogens/parasites like sea lice monitored, how often does monitoring occur and what types of treatments would be used if lice were detected on farmed fish? NSDFA responded to questions from the Mi'kmaq as follows:
 1. NSDFA's assessment is limited to what is outlined in the regulations. The regulations require the applicant to hold one public meeting and to advertise that meeting, record that meeting, and submit a scoping report. NSDFA

assesses whether the applicant meets these requirements. Beyond these requirements, the evaluation of the adequacy of proponent engagement efforts is undertaken by the ARB.

2. DFO evaluates the types of fisheries undertaken in the proposed project area, including commercial and Aboriginal fisheries. NSDFA networks with DFO on commercial fisheries but not Aboriginal (FSC and livelihood) fisheries, thus the consultation and engagement processes. NSDFA is also interested in hearing specific concerns about potential adverse impacts on local FSC fisheries from the Mi'kmaq during the consultation process – at this table. NSDFA asks who at Acadia First Nation the department could contact to discuss local FSC activities. Curtis identified himself as being able to meet with the applicant and connect the applicant to other Mi'kmaq fishers in the area.
3. The ARB is an independent adjudicative board that appointed by the Minister of Fisheries and Aquaculture through the provincial government's Agencies, Boards and Commissions (ABC) process. The Board was a key feature of the new aquaculture regulations. ARB hearing proceedings are similar to those of a Court of law, the Board relies on testimony from folks in room (experts, etc.) to make its decision. The Board is comprised of the following individuals: Jean McKenna, Dr. Richard Patterson, and Michael McKinnon. Further information on ARB members is available here: <https://arb.novascotia.ca/board>.
4. Sea lice are generally monitored monthly, though throughout the year monitoring may be increased to once a week – less frequently when the water is colder. There has been no history of lice or treatment since the farm at this site went in. Having more space can reduce the likelihood of a lice outbreak, so the goal is to provide more room so that fish are not closely packed at the site. Different options for treatment include:
 - cleaner fish in cages – small native species such as gunner or lumpfish are added to the cage to interact with salmon in symbiotic way – they remove lice from surface of salmon,
 - salmon baths with warm waters,
 - gentle pressure washing, and
 - hydrogen peroxide and Salmosan (though these have never been used in NS)
- The tool used depends on the unique circumstance. Only one single year class of fish is allowed on each site, fallow periods of between 2 and 6 months – with no fish on site – are also employed. KMKNO advised NSDFA that Cooke Aquaculture/Kelly Cove Salmon hadn't yet reached out.
5. Project Description (NSDFA)
 - Please refer to the presentation materials provided.

- KMKNO, Glooscap First Nation, and Acadia First Nation raised several questions, including:
 1. Why is the projected increase in production not consistent with the increase in lot size?
 2. Does expanding the lot size increase the likelihood that migrating wild fish such as elvers or glass eels would encounter cages (which can be traumatizing and/or lethal for smaller fish or those in earlier phases of their lifecycle)?
 3. Is eel grass present at these sites? If so, could any copper present have an adverse impact the species?
 4. Has the impact of ocean currents on the deposition of waste been considered?
 5. What are the anticipated impacts of these farms on local or transient lobster populations?
 6. Could there be adverse impacts on lobster populations from the potential use of therapeutants on farmed salmon?
 7. Sea lice may not be an issue now, but may be in the future if sites continue to expand. Can NSDFA assure the Mi'kmaq of Nova Scotia that chemicals such as hydrogen peroxide will not be used to treat potential future sea lice outbreaks?
 8. What causes farmed salmon to escape, how can proponents protect against escape? Could the presence of ice increase the likelihood of escape?
 9. Is Infectious Salmon Anemia (ISA) a factor and could it be transmitted to live fish?
- NSDFA responded to questions from the Mi'kmaq as follows:
 1. Scrutiny applied to gear on site has increased with the new regulations – gear must now fall completely within site boundaries. Additionally, more space means less crowding.
 2. NSDFA shares concern related to impact of increased sizes of leases on the likelihood of migrating wild fish encountering cages. Limited literature on the subject is available, specifically as it applies to glass eels. It is thought that wild fish would avoid the obstacle presented by cages but if they did go inside it would likely lead to trauma or consumption. Aquaculture has been undertaken in NS since the late 70s-early 80s and the potential impacts are well understood. Regulations have been developed to mitigate potential impacts on wild species – NSDFA is not aware of any evidence that the eel population has declined because of salmon farming and the issue has not been flagged by DFO.
 3. Eel grass is not thought to be present at the proposed sites – the species has not been flagged by DFO, the Canadian Wildlife Service or the provincial Department of Lands and Forestry. Further, copper is no longer used in aquaculture industry – nets are now pressure cleaned by underwater ROVs.

Baseline monitoring for the proposed sites is now complete – extensive fish and fish habitat surveys have been completed. No eel grass, critical habitat or species at risk were noted.

4. Ocean currents were measured in all three proposed aquaculture sites and modelling was undertaken to determine where potential waste would be deposited. According to the models, most of deposition happened immediately beneath cages – this is generally what we have seen through environmental monitoring program as well. NSDFA to provide more information.
 5. Interactions between salmon farms and lobster are currently being studied by the department (please refer to presentation materials for additional details). Lobster were found to be present in the vicinity of sites – and moving through them - in August, during the molting season. Lobsters and crabs were both tagged. FSC fishers in the area were present during tagging – NSDFA communicated with fishers, advising them to look out for tags and to return any tagged animals to the water. The study will continue into net season.
 6. NSDFA is also concerned with any potential future use of therapeutants on the ecosystem. Therapeutants are highly regulated and studied by a number of government regulators including Health Canada, Environment and Climate Change Canada, and DFO. Human health implications are also well documented and have been studied extensively. Therapeutants would be used as a last resort with less invasive and damaging treatments preferred. Every step taken would be subject to robust regulation and any approvals granted would be subject to rigorous tests by regulators.
 7. The aquaculture industry is very well regulated and is presenting more biological treatment methods as the public becomes more chemical adverse. Accumulative effects are factored into decision making.
 8. The risk of farmed salmon escaping fish farms is mitigated in several ways:
 - All sites require the approval of a professional engineer and are required to withstand a 50 to 100-year storm.
 - NSDFA uses a fish tracing program (based on a model used in Maine).
 - The department can also access each site and audit how and why fish escaped and identify any risks for breach.
 - All fish farmers are required to have a marking/traceability plan – physically or genetically – if fish are not marked, operators can be prosecuted.
- Ice is certainly a factor and has been considered for the current applications in Liverpool Bay.
9. Eggs for these salmon aquaculture sites come as small fry from a main hatchery in NB. They are screened in NB and cleared of reportable disease (e.g. ISA) before being transferred to NS. The federal government is responsible for overseeing the transfer process. Once small fry are brought to the local sites they are subject to a surveillance program administered by

veterinarians. The provincial veterinary team visits sites 4 times a year to complete screening activities. Cooke Aquaculture veterinarians do their own monitoring as well. Mitigation measures including a fallow period, surveillance, and other monitoring activities are also undertaken. NSDFA veterinarian to provide additional information.

6. Status of the Application Review

- To be addressed at future meeting.

7. Action Items/next steps

- a. Next meeting to be scheduled early in 2021.
- b. NSDFA to share video of existing site and environmental monitoring activities at next meeting.
- c. NSDFA to share additional information on current modelling at next meeting.
- d. NSDFA to share additional information on disease prevention and mitigation measures at next meeting.
- e. Acadia First Nation to discuss potential proponent engagement with community members, Band Council and KMKNO before advancing conversations with proponent directly.
- f. NSDFA to provide KMKNO and Acadia First Nation with a map including the depth and currents around the proposed aquaculture sites.
- g. Acadia First Nation to provide NSDFA with community contact to discuss local FSC activities.

Supplement #2: Record of Consultation Meeting of March 1, 2022
(3 pages)

Record of Meeting

Consultation between the Assembly of Nova Scotia Mi'kmaq Chiefs and the Province of Nova Scotia – Department of Fisheries and Aquaculture Under the 2010 Mi'kmaq-Nova Scotia-Canada Consultation Terms of Reference

Aquaculture Lease and Licence Application Nos. 1205, 1432 and 1433 – Liverpool Bay – Kelly Cove Salmon - Fish Health

March 1, 2022 10:00 am - 12:00 pm

Microsoft Teams

Mi'kmaq of Nova Scotia: Twila Gaudet, Tamara Young, Mise'l Abrams, Gerard Francis, Bec Borchert, Shawn Taylor (KMKNO), Jeff Purdy, Charmaine Stevens, Curtis Falls (Acadia FN)

Department of Fisheries and Aquaculture: Bruce Hancock, Carla Buchan, Robert Ceschiutti, Lynn Winfield, Anthony Snyder, Melinda Watts, Nathaniel Feindel

Transport Canada: Linda Babineau-LeBlanc

Office of Aboriginal Affairs: Beata Dera, Claire Rillie

PURPOSE

The purpose of this consultation meeting is:

1. To provide information about three proposed aquaculture applications (AQ 1205, 1432 and 1433) for the marine cultivation of Atlantic Salmon in Liverpool Bay.
2. To provide a status update on items related to fish health.
3. To discuss concerns and potential impacts to Treaty and Aboriginal rights resulting from the proposed project.

AGENDA

1. Opening Prayer (Optional)
2. Introduction
3. Consultation Update (OLA)
 - Consultation at the moderate level was initiated via written correspondence on the above-noted applications on September 25, 2019.
 - KMKNO responded on November 22, 2019 advising that the Assembly wished to proceed with consultation.

- Correspondence was exchanged throughout 2019 and into early 2020 and a consultation meeting between KMKNO, Acadia First Nation and NSDFA was held on December 9, 2020.
 - This is our first consultation meeting on the Kelly Cove Liverpool Bay expansions since 2020.
4. Status of Application (NSDFA)
- NSDFA advised they are working with network advisors to collect feedback.
 - NSDFA added that they are waiting DFO's final report. Upon receipt of final report and completion of consultation, NSFDA will send the application and network review findings to the ARB for their decision.
 - NSDFA stressed that given the amount of time that has passed, they are now very close to sending the application to the Board and that they are working on submission documents already.
 - KMKNO asked if traditional use knowledge will be included in application package.
 - NSDFA underscored that they rely on the Mi'kmaq to provide traditional use information, adding that DFO provides some limited fisheries-related information as a part of the network review process.
 - NSDFA noted that many network partners are involved (9 or 10) and that they are now 2 years into the process from when the application was first submitted.
 - NSDFA stressed that they really do want to hear from the Mi'kmaq on this and that they don't want to leave the impression everything consultation has been completed, noting consultation plays an important role in decision-making.
 - NSDFA stated that it is essential to hear from the Mi'kmaq on fisheries undertaken in the project area.
 - OLA reiterated that Mi'kmaw knowledge and information about the practice of rights in the specific areas identified helps the department make this decision, again stressing that this table needs to hear that information.
5. Overview of Aquatic Animal Health Section (NSDFA)
- *Please see presentation deck for details.*
 - NSDFA stressed the importance of the Marine Finfish Health Surveillance Program to proposed applications.
 - Acadia asked about monitoring and potential of pathogens to jump from cage to cage.
 - NSDFA clarified that the department, along with private veterinary practitioners, monitor the health status at the marine farms on a regular basis, and that the monitoring involves looking to see if bacteria, parasites or viruses of concern are present.
 - NSDFA reiterated the importance of monitoring – and that the monitoring program allows the Province and the Operator to act quickly if action is needed regarding potential health findings, and that sometimes removing one cage is enough to remedy health concerns if

they were present. Veterinarians involved in the health monitoring, must follow the marine health surveillance program that is dictated by the Province.

- NSDFA noted that the health surveillance program monitors for pathogens that are known to our environment, but others that may be new or emerging to Nova Scotia.
- KMKNO asked about timing of surveillance.
 - i. NSDFA clarified:
 1. Both the Provincial Aquatic Animal Health Veterinarians and the Private Veterinary Practitioners (The Designated Aquaculture Veterinarians) are responsible for the health surveillance program and completing the associated diagnostics. If a pathogen of concern is suspected or identified, it must be immediately reported to the Chief Aquatic Animal Health Veterinarian's Provincial Office.
 2. On average, the routine health surveillance at a marine finfish farm is completed every 6 weeks by a licenced veterinarian; though the monitoring may be increased at the discretion of the attending veterinarian.
 3. Routine Dives are required every week on every cage, unless limited by uncontrollable factors such as severe weather - if mortality is found at the site and meets the threshold for mandatory reporting, as per the Regulatory Requirement, that mortality must be reported to the Chief Aquatic Animal Health Veterinarian's Provincial Office.
- 6. Status of Action Items Identified at December 9, 2020 Consultation Meeting (NSDFA):
 - NSDA information on disease prevention and mitigation measures (e.g. sea lice monitoring, testing, therapeutics) - *see above and presentation materials for additional information.*
- 7. Closing Prayer (Optional)

Supplement #3: Record of Consultation Meeting of March 2, 2022
(7 pages)

Record of Meeting

Consultation between the Assembly of Nova Scotia Mi'kmaq Chiefs and the Province of Nova Scotia – Department of Fisheries and Aquaculture Under the 2010 Mi'kmaq-Nova Scotia-Canada Consultation Terms of Reference

Aquaculture Lease and Licence Application Nos. 1205, 1432 and 1433 – Liverpool Bay – Kelly Cove Salmon - Potential Environmental Impacts

March 2, 2022 12:00 - 2:00 pm

Microsoft Teams

Mi'kmaq of Nova Scotia: Twila Gaudet, Tamara Young, Mise'l Abrams, Bec Borchert, Shawn Taylor, Gerard Francis (KMKNO), Jeff Purdy, Charmaine Stevens, Curtis Falls (Acadia FN)

Department of Fisheries and Aquaculture: Bruce Hancock, Carla Buchan, Robert Ceschiutti, Lynn Winfield, Jessica Feindel, Nathaniel Feindel, Melinda Watts

Transport Canada: Linda Babineau-LeBlanc (absent)

Office of Aboriginal Affairs: Beata Dera, Claire Rillie

PURPOSE

The purpose of this consultation meeting is:

1. To provide information about three proposed aquaculture applications (AQ 1205, 1432 and 1433) for the marine cultivation of Atlantic Salmon in Liverpool Bay.
2. To provide a status update on the project including potential environmental impacts.
3. To discuss concerns and potential impacts to Treaty and Aboriginal rights resulting from the proposed project.

AGENDA

1. Opening Prayer
2. Introduction
 - OLA made note of the productive conversation held March 1, 2022 about traditional fisheries activities undertaken by Acadia First Nation in Liverpool Bay and suggested this might be a good opportunity to continue the conversation using a map to help guide the location of fishing activities.

- OLA noted it recognizes the sensitivity around any location-specific information provided but underscored the importance of the information to demonstrating traditional use in the area.
- KMKNO noted that the food fishery is not static, adding there is often movement.
- Acadia noted that the project as proposed would be taking away some areas where fishing could occur safely.
- OLA asked the table if using a map would be helpful for the discussion and Parties agreed.
- KMKNO asked if any underwater archaeological work had been undertaken to date.
 - NSDFA noted that no significant concerns were raised by CCTH during the review process but that CCTH advised that if any heritage resources were discovered that the operator should contact the Special Places Coordinator.
- OLA asked for Acadia to provide some additional details on fishing activities undertaken by community members.
 - Acadia noted that lots of fishing occurs in Liverpool Bay itself - people fish all along the Bay and if they are not catching in one place, they move along to another.
 - Acadia further explained that food fishery boats are small vessels with only 1 or 2 people on board, adding that any time a company takes up more ocean bottom, that is another area where community members can't fish.
 - Acadia noted that the community has 1500 - 1600 Band members - in Queens County it has 300 or 400 members and that the membership list is growing.
 - Acadia explained that Coffin Island is an area of importance to the Mi'kmaq and that it has been for hundreds of years, adding that community members have fish shacks there.
 - Acadia voiced explicit opposition to the proposed expansion of the project footprint.
 - Acadia also stated that the Mi'kmaw Grand Council is opposed to the existing site and its expansion.
 - Acadia community members noted personal experience fishing in the area.
 - Acadia underscored their perspective that the proposed expansion will impede the community's FSC and moderate livelihood fisheries "without question".
 - Acadia questioned the visual impacts to users of the area and tourism.
- NSDFA asked about specific impacts on First Nations fisheries - would be helpful for us to understand better what that means.

- KMKNO stressed it may not be able to be communicated more clearly than what has already been said. KMKNO added that the Mi'kmaq have continued to move and change where they fish because of obstacles - fishers have been flexible - aquaculture in this area has already changed how they fish.
 - KMKNO underscored that this application needs to be carefully considered by regulators - the Mi'kmaq have been displaced and need to fish around the existing site already.
- Acadia noted that it provided some rough numbers at yesterday's meeting (approximately 30 community members participate in FSC fishery and those numbers are growing) - numbers of fish tags issued in area - that was minimum fishing in that area, adding that Acadia was describing the summer fishery in that example - when lobsters come inshore (not in winter when the larger commercial fishery is undertaken).
- Acadia added that more fishing happens in skiffs - the Mi'kmaq employ a practice called "hooping" in the area - it may not be apparent to others that fishing has been in the area given that traps are not used.
- NSDFA asked for more information on hooping
 - Acadia described a process whereby bait is applied to the hoop - the hoop is then dropped to the bottom of the ocean and then hauled back - explaining that they are not left overnight.
 - Acadia explained they are handmade hoops - they are important to people and not left on site.
- Acadia noted that there are 10,000 years of recorded artifacts through Mersey corridor and that the area is of high importance to the Mi'kmaq.
- Acadia added that underwater archaeology would be important in that area given the area is of such high importance.
- Acadia described gear loss.
- Acadia stressed the fiduciary duty of government and importance of reconciliation.
- Acadia voiced concern over industry having what appears to be the final say.
- NSDFA noted that their staff had observed FSC fishing in areas surrounding the sites and asked if the presence of aquaculture sites could actually be of benefit to Mi'kmaw fisheries in the area.
 - Acadia did not have any information to support this observation.
- Acadia added that NCNS gives out a lot of food fishing tags in area as well.
- KMKNO returned to the topic of archaeology and importance of Mersey area.
 - NSDFA clarified that no survey was done - CCTH reviewed and suggested that NSDFA asks that operators notify Special Places Coordinator if heritage resources were encountered.

- NSDFA noted that they welcome any specific information that would counter CCTH's advice.
 - KMKNO ARD noted that the paleontological information does not necessarily relate to archaeology (referencing information from the development plan).
 - NSDFA will follow up with CCTH to ensure nothing was missed in their assessment.
 - KMKNO ARD flagged the high risk nature of the area in terms of archaeology - approximately one quarter of all known Mi'kmaw archaeological sites in Nova Scotia are on the Mersey River - the Mersey was an exceptionally important travel route for the Mi'kmaq.
 - KMKNO ARD added that shorelines are not currently as they were in the past - could have been dry land in the past that supported human life.
 - KMKNO ARD asserted that the project area is extremely high risk and recommends an ARIA be completed.
 - KMKNO ARD noted that there is archaeology on the river itself in addition to on the Island so in between wouldn't be a surprise if resources were located in and around the project site.
 - NSDFA stated that archaeology was not on the agenda today and that this is a new issue raised.
 - KMKNO ARD stressed that archaeology needs to be captured in action items.
3. Consultation Update
- Consultation at the moderate level was initiated via written correspondence on the above-noted applications on September 25, 2019.
 - KMKNO responded on November 22, 2019 advising that the Assembly wished to proceed with consultation.
 - Correspondence was exchanged throughout 2019 and into early 2020 and a consultation meeting between KMKNO, Acadia First Nation and NSDFA was held on December 9, 2020.
 - This is our second consultation meeting on the Kelly Cove Liverpool Bay expansions since 2020.
4. Status of Action Items Identified at December 9, 2020 Consultation Meeting:
- High-level overview of Environmental Monitoring Program (NSDFA)
 - Please see presentation materials for details.
 - KMKNO asked if sampling is completed outside and inside farms.
 - NSDFA noted that the presence of the grid prevents operators from taking video inside the cages on the sites themselves.
 - Bottom video of site (NSDFA)
 - NSDFA walked attendees through techniques employed for video.
 - Graphics and information on modelling (NSDFA)
 - Please see presentation materials for details

- NSDFA clarified that modelling is within the purview of DFO and that it is required by DFO as part of any finfish application.
- Map of proposed and existing site, including depth and currents (NSDFA)
 - Please see presentation materials for details.
- Status of engagement on applications with community, Band Council and KMKNO (Acadia)
 - Acadia described a lack of engagement by the company but a significant amount of opposition from community members and Band Council.
 - KMKNO has not received outreach from Cooke.
 - NSDFA asked if there is a willingness to meet with Cooke on behalf of Acadia.
 - Acadia noted they would have to return to Chief and Council to ask if a meeting could occur. Conversation with community members could occur but support is unlikely. This will be added to action items.
- Acadia asked why government appears to support industry and why it's always a fight for the Mi'kmaq.
- Acadia asked if local landowners had been consulted with and where the value of their land and property comes into consideration.
- Acadia asked if impacts to tourism had been considered.
- Acadia noted that government appears to support the farm, adding that the Mi'kmaq are forced to put their case forward in opposition. Cooke doesn't have to fight on their own because government is doing it for them - considerable bias is observed, from Acadia perspective.
 - NSDFA described the application review process, noting that a decision on these applications will be made by an independent board (the Aquaculture Review Board or ARB).
 - NSDFA explained that the department doesn't take a position on applications, noting that it will take views from this table to the Board for consideration.
 - NSDFA noted that the information gathered is based on 8 factors that are laid out in aquaculture regulations, which were developed in accordance with advice received in the Doyle-Lahey report. NSDFA explained that the Mi'kmaq were engaged in the development of regulations, adding that the Chair of Regulatory Advisory Committee is Chief Terry Paul.
 - NSDA ensured the Mi'kmaq that any perspectives on improving those regulations can be shared with the committee.
- NSDFA added that the same application process also applies to all Mi'kmaw commercial aquaculture applications. It's not a process that is meant to exclude the Mi'kmaq. Consideration of other users of the space is a factor in decision-making - e.g. waterfront property owners - the public has an opportunity to provide feedback through this process.

- NSDFA explained that they have engaged with Tourism Nova Scotia who have conveyed that the presence or absence of aquaculture has not impacted tourist's stays in Nova Scotia to date. NSDFA expressed a willingness to consider opposing views and invited comment from the group.
 - Acadia reiterated that impacts to rights and archaeology are of utmost importance and underscored the perception that government is supporting the proponent.
 - OLA added that perception of siding with industry is not the Province's intent - this consultation process is designed to hear and listen to Mi'kmaq concerns and to have a discussion about impacts to Aboriginal and Treaty Rights. OLA also noted that one aspect of consultation requires that government balances the interests of the Mi'kmaq with other users/citizens.
 - OLA expressed an appreciation for the science presented.
 - Acadia reiterated their description of the displacement of Mi'kmaw people, adding that to the Mi'kmaq this is so much more than an aquaculture site - it's culture and near and dear to communities.
 - NSDFA asked if any more general information is needed by the community or the KMKNO.
 - Parties agreed to convene internal discussions including today's learnings and to then reconvene for the next meeting dates.
 - KMKNO noted that discussion on archaeology will be key for next meeting.
 - KMKNO suggested last week of March and first 2 weeks of April for next meeting. Parties will look to timing. (Tamara, Charmaine, and Claire to work together to schedule).
 - NSDFA explained that engagement should occur between between Acadia and Cooke and that the ARB would need to consider engagement efforts and consultation in their decision-making process.
 - OLA noted that the Crown does at times rely on proponents for information-sharing and that proponent engagement can feed into consultation.
 - OLA described how it advises on early engagement, adding that on other projects the Crown can rely on successful engagement opportunities for consultation purposes. Engaging is essential to relationship-building.
 - Acadia committed to discussing engagement with Cooke with Chief and Council at next Monday's consultation meeting. Acadia stated that it will advise Twila on the outcome of that conversation.
 - Community contact for information on FSC fisheries (Acadia)
 - Curtis Falls agreed to remain a community contact for FSC fisheries.
5. Action Items/Next Meeting (All)
- NSDFA will follow up with CCTH to ensure nothing was missed in their assessment.

- KMKNO ARD asserted that the project area is extremely high risk and recommends an ARIA be completed.
- KMKNO ARD stressed that archaeology needs to be captured in action items.
- Parties agreed to convene internal discussions including today's learnings and to then reconvene for the next meeting dates.
- KMKNO noted that discussion on archaeology will be key for next meeting.
- KMKNO suggested last week of March and first 2 weeks of April for next meeting. Parties will look to timing. (Tamara, Charmaine, and Claire to work together to schedule).
- Acadia committed to discussing engagement with Cooke with Chief and Council at next Monday's consultation meeting. Acadia stated that it will advise Twila on the outcome of that conversation.

6. Closing Prayer

Supplement #4: Record of Consultation Meeting of June 1, 2022
(7 pages)

RECORD OF MEETING

Consultation between the Assembly of Nova Scotia Mi'kmaq Chiefs and the Province of Nova Scotia – Department of Fisheries and Aquaculture Under the 2010 Mi'kmaq-Nova Scotia-Canada Consultation Terms of Reference

Aquaculture Lease and Licence Application Nos. 1205, 1432 and 1433 – Liverpool Bay – Kelly Cove Salmon

June 1, 2022

2:30 - 4:30 pm

Microsoft Teams

Mi'kmaq of Nova Scotia: Twila Gaudet, Tamara Young, Mise'l Abrams, Bec Borchert, Emily Pudden (KMKNO), Jeff Purdy, Charmaine Stevens, Curtis Falls (Acadia FN)

Nova Scotia Department of Fisheries and Aquaculture (NSDFA): Bruce Hancock, Carla Buchan, Nathaniel Feindel, Robert Ceschiutti, Melinda Watts

Nova Scotia Department of Communities, Culture, Tourism and Heritage (CCTH): Katie Cottreau-Robins, John Cormier, Susan Jeffries

Office of L'nu Affairs (OLA): Beata Dera, Claire Rillie

PURPOSE

The purpose of this consultation meeting is:

1. To provide information about three proposed aquaculture applications (AQ 1205, 1432 and 1433) for the marine cultivation of Atlantic Salmon in Liverpool Bay.
2. To provide a status update on the project.
3. To follow up on action items from March 1 and 2, 2022 consultation meetings.
4. To discuss concerns and potential impacts to Treaty and Aboriginal rights resulting from the proposed project.

AGENDA

1. Introductions (Chair)
2. Consultation update (OLA)
 - Consultation at the moderate level was initiated via written correspondence on the above-noted applications on September 25, 2019.
 - KMKNO responded on November 22, 2019 advising that the Assembly wished to proceed with consultation.
 - Correspondence was exchanged throughout 2019 and into early 2020 and a consultation meeting between KMKNO, Acadia First Nation and NSDFA was held on December 9, 2020.

- Additional consultation meetings were held on March 1 and 2, 2022.
 - This is our fourth consultation meeting on the Kelly Cove Liverpool Bay expansions since 2020.
3. Proponent engagement update (Acadia/KMKNO)
- Engagement meeting between Cooke and Acadia occurred on April 15, 2022.
 - Acadia explained that the turnout was small but fully engaged - all were opposed to the project. One community member from Port Mouton who fishes in Liverpool Bay (commercial/FSC/communal/moderate livelihood fisher) and is very knowledgeable about the area shared information with the company.
 - Acadia described a significant discussion on archaeology in the area and the significance of the Mersey system to the Mi'kmaq.
 - Acadia stated the company was respectful and learned where community was coming from, adding that the company seemed surprised by the archaeology piece - to that point they'd been unaware to a certain degree.
 - Acadia noted the company did not have the map referenced at our last consultation meeting which was disappointing because band members really needed to see the physical layout of the proposed expansions so they could get an understanding of the scope.
 - KMKNO stated there were real questions about adequacy of consultation process and that Acadia expressed concern that they were not able to provide feedback earlier on in the process (early engagement was a missed opportunity).
 - Acadia explained that the company could have put on workshops/engagement sessions earlier on as they did in Queens County with the municipality.
 - NSDFA stated that when they originally initiated consultation there was an offer to invite the proponent to early meetings.
 - KMKNO noted that the early understanding was that the company was reaching out to engage with the community but that wasn't happening - when consultation began they wanted to get full understanding before going into an engagement session with no prior information.
 - KMKNO underscored the opposition to the development by Acadia community members.
 - NSDFA noted that the company described in their reporting to the department that they had reached out to First Nations.
 - NSDFA reminded the table that it was difficult to arrive at meeting dates, adding they have been more than willing to engage on these applications and that archaeology was not initially raised on the file but was brought up later.
 - NSDFA explained they do not share information at consultation table with the applicant, underscoring the importance to address potential impacts to rights as a government role.
 - Acadia explained the mistrust and weariness from communities regarding issues related consultation, fisheries, etc. When the requests to meet first arrived, the community was on guard and needed to take time to consider before being comfortable moving ahead.

- KMKNO supported Acadia's statement re: hesitation to meet, taking time to come to the table, adding that presently there is a willingness to learn more about the project, adding the importance of knowing impacts to rights. KMKNO expressed concern that the company is taking up such important real estate that could be used to fish.
4. Status of action items identified on March 1 and 2, 2022 (All)
 - a. NSDFA will follow up with CCTH to ensure nothing was missed in their assessment.
 - CCTH explained that no official assessment has been undertaken to date, adding that the background information presented today was helpful and that CCTH was not included in earlier consultation meetings.
 - CCTH noted that the Mi'kmaq have been clear on direction re: archaeology.
 - CCTH stated that their examination of the application in these areas yielded information on shipwrecks and pre-contact site on Coffin Island - supporting the Mi'kmaw position that limited current knowledge does not preclude the existence of additional sites - and adding that the department understands the Mi'kmaw connection to the Mersey system.
 - CCTH noted that they are still considering the project area as having a high energy subsurface environment and sandy floors.
 - b. KMKNO ARD asserted that the project area is extremely high risk and recommended an ARIA be completed.
 - c. KMKNO ARD stressed that archaeology needs to be captured in action items.
 - d. Parties agreed to convene internal discussions including today's learnings and to then reconvene for the next meeting dates.
 - e. KMKNO noted that discussion on archaeology will be key for next meeting.
 - CCTH explained they are not surprised that an ARIA was requested and suggested a 2-phase approach may be warranted: a thorough background study first, then talking together as a group about the results and discussing whether or not further exploration is required or if there's existing benthic data showing the ocean floor that could be reviewed by archaeologists.
 - NSDFA noted that archaeology was raised for the first time in March 2022 meetings.
 - KMKNO ARD added that there has been a tendency to ignore high energy environments but that in other similar areas there have been archaeological discoveries - they recommended underwater archaeology be completed.
 - All Parties agreed that archaeology is now under consideration.
 5. Outstanding questions re: fish health (KMKNO)
 - KMKNO agreed to follow-up internally and communicate via email or offline if the veterinary team should be invited to the next consultation meeting.
 - Acadia expressed an interest in inviting the veterinarians to next meeting to answer questions the community may have.

- Acadia underscored capacity concerns, adding that it takes time to review materials and absorb details.
 - KMKNO agreed to help support Acadia's assessment.
 - NSDFA stated that they would be happy to receive questions and circulate them to the veterinary team or bring them back in for the next consultation meeting.
6. Potential adverse impacts to Mi'kmaq Aboriginal and treaty rights (KMKNO)
- KMKNO explained that they have covered areas where rights could be impacted - fisheries primarily plus archaeology, adding that a lot comes down to the areas themselves and the fishing happening in those areas - KMKNO wants to make sure fishing activities not impeded by proposed activities.
 - KMKNO noted there is clear opposition to the applications in the area.
 - Acadia explained that Council and community members are both opposed.
 - OLA voiced view that specificity around the practice of rights is crucial to consultation - from a project planning perspective, looking at immediate area around project - adding that archaeology is being worked through but for fishing or the practice of other rights that could be impacted by these expansions, it would be helpful to know what species being fished, how many community members be impacted.
 - OLA added that they are unable to access information on licences from DFO but that the Province needs information to help government understand the potential specific impacts due to the proposed project expansions. OLA asked for numbers of community members fishing in the specific areas slotted for expansion and if an in-depth conversation on those issues would be possible.
 - KMKNO noted that the number of community members fishing in the area isn't relevant, adding that the Mi'kmaq have continued to be displaced because of commercial fisheries and that the Mi'kmaq have continued to move along, using small vessels, close to shore. KMKNO stressed that it could be 5 members or 500 members - they still have a treaty right to fish.
 - KMKNO noted they understand that more specificity is required and suggested that DFO data could be a starting point.
 - Acadia explained that this was discussed at the meeting with Kelly Cove, adding that in Queens County we have well over 300 Acadia Band members but that there are so many more beyond that. The Native Council of Nova Scotia (NCNS) also has a huge presence in that area.
 - Acadia further explained that many band members engage in lobster fishing in area - for food fishing (3 tags each) plus moderate livelihood which is growing as it becomes sanctioned by DFO. Acadia noted that the area is very accessible and close to the shore for the small food fishery vessels.
 - Acadia repeated serious concern for the displacement of fishers given the large project area which almost takes up the whole coastline of Coffin Island.
 - Acadia noted there is a food fishery in the area around Coffin Island and that commercial fisheries are located there as well.

- Acadia described Coffin Island as a historic summer place for the Mi'kmaq, stressing the proposed aquaculture expansion could take up the whole shoreline area.
- Acadia explained there is a district approach to moderate livelihood fisheries - 3 other bands are involved. There will be access for Bear River, Annapolis and Glosap in Area 33. Access in LFA 33 will grow to include other members of Mi'kmaq communities. Gaspereau and elver fisheries are also being expanded through moderate livelihood and the community anticipates more cooperation in this part of the province.
- NSDFA explained that the maps brought in for the March, 2022 meetings show the lease areas put forward by the proponent but that they do not reflect actual footprint of pens in water, adding there is a big difference between actual space occupied by pens and gear and size they are requesting in their application.
- NSDFA added that the proponent is also asking for buffers to hold nets in place - in a space that more than accommodates gear.
- NSDFA shared that operators allow people to fish within boundaries of their lease right up to the cages, adding that departmental staff have observed lobster traps set around pens.
- NSDFA stressed that they rely heavily on advice from federal partners, adding that DFO's responsibility is to comment on impacts to fish and fish habitat and that they rely on DFO for advice on impacts to FSC, moderate livelihood and commercial fisheries in the area.
- NSDFA reminded Parties about the project tracking lobsters in vicinity of fish farms, suggesting that it might be worth talking about the latest findings. NSDFA explained that the department looks the impacts of aquaculture on lobster and added that there is no evidence of decrease in landings at this time. NSDFA stressed the importance of specificity: they need to know how what's being proposed here would prevent fishers from accessing the resource and if reasonable accommodations can be developed to mitigate any potential loss.
- OLA explained that in their experience with DFO, the department don't participate unless they are issuing an authorization or unless specific issues about fish and fish habitat are raised.
- KMKNO asked if DFO could be brought to the table.
- NSDFA reiterated the importance of learning where the best/most productive fishing is done, suggesting that maybe one or more of the proposed sites is actually better for expansion. NSDFA stressed the need to balance interests with other groups.
- Acadia underscored the colonial approach of government regulation and support for industry development and suggested the incorporation of a two-eyed seeing approach.
- NSDFA stressed that there are opportunities for the Mi'kmaq in aquaculture development as well.
- Acadia expressed a desire to work together to find the places where aquaculture development can happen.

- OLA explained that the more information the Province receives, the more informed the decision can be, adding that quantifying use does matter.
 - OLA added that government must manage and balance various interests - that is the difficult business of governing.
 - OLA stressed that the more information received about rights, the more equipped they are to inform our leadership on the extent of what's happening and where. Without details, they lack information to inform decision-makers.
 - NSDFA underscored that the decision before them is not a yes or no. All information will be shared with the ARB for decision but that the department has a duty to consult on potential impacts to rights.
 - CCTH noted concern that the table may not be at a place to discuss archaeology at present.
 - Acadia highlighted difference between big lobster boats and small community fishers who can't move far offshore to fish.
 - Acadia reiterated the colonial government approach is in conflict with the Mi'kmaw perspective of having an open mind.
 - Acadia explained that community members teach their children and grandchildren where hunting and fishing occurred in the past, stressing that Mi'kmaw knowledge is vast.
 - NSDFA stated they are not aware of lobster fishers being displaced by aquaculture operations anywhere in the province. NSDFA reminded Parties that they have provided evidence about stocks in the Bay with the telemetry study, adding knowledge about how lobsters behave around fish farms, and suggesting they can get landings to compare with if that helps.
 - NSDFA noted they think there is ability to practice rights and grow salmon in the same area.
7. Next steps/action items (All)
- NSDFA to consider the request by KMKNO ARD to completing an ARIA for the project area.
 - KMKNO to follow-up with NSDFA on whether or not another technical session on fish health is required.
 - Acadia to provide NSDFA with questions from the community regarding fish health.
 - KMKNO to provide NSDFA with information on what species are being fished, where fishing occurs and how many community members would be impacted, how the project would prevent fishers from accessing the resource and if reasonable accommodations can be developed to mitigate any potential loss, within the immediate area of the project.
 - Parties agreed to work towards a way of illustrating specific adverse impacts to Mi'kmaw Aboriginal and treaty rights from proposed site expansions.
 - OLA suggested looking at a map together or one the community can provide to ascertain what fishing happens in the proposed areas for expansion.
 - KMKNO agreed to touch base with Mi'kmaw team on that item.
 - Acadia will also return to Chief and Council for further conversation.

This is **Exhibit "B"** mentioned and referred to in the affidavit of Charmaine Stevens affirmed before me on this 18th day of January, 2024



A Commissioner of Oaths in and for the Province of Nova Scotia

GARNET E. BROOKS
A Barrister and Solicitor of
the Supreme Court of Nova Scotia

<https://www.saltwire.com/cape-breton/news/digging-keji-archeological-discoveries-hint-at-mikmaq-lives-going-back-six-millennia-935/>

Digging Keji - Archeological discoveries hint at Mi'kmaq lives going back six millennia

KEJIMKUJIK - Kaitlin MacLean holds a small piece of stone shaped for scraping animal hides - one of thousands of artifacts found in a summer-long archeological dig at Kejimkujik National Park.

Lawrence Powell | Posted: Sept. 22, 2017, midnight | Updated: Oct. 11, 2017, 12:58 p.m. | 7 Min Read



Parks Canada archeologist Charles Burke holds an unfinished arrowhead made from chert, a sedimentary rock that when chipped with another rock has razor sharp edges. Archeologists unearthed thousands of artifacts, mostly stone tools, in a small area at Eel Weir Bridge at Kejimkujik National Park over the summer.

She's at Eel Weir Bridge Sept. 21 deep in the park – exactly eight kilometres from where the pavement ends -- at a site that shows continuous Mi'kmaq use dating back perhaps 6,500 years.

She thinks about the lives of the people who would have used such tools.

And while those Eel Weir Bridge treasures are staggering in themselves, Parks Canada archeologist Charles Burke puts it in a broader context that suggests bigger things.

“One thing to keep in mind, from Annapolis Royal to Liverpool there are an estimated 250 known indigenous archeological sites which makes up the Mersey River corridor – it contains 25 per cent of all the (indigenous) archeological sites in Nova Scotia,” he said.

He's standing beside the Mersey where construction crews are building a new bridge that will span 150 feet across the water without touching it. Both sides are an archeologist's dream.

For the millennia between 6,500 years ago and 1,400 years ago – even up to 500 years ago – the Mersey River is a huge archive of archeological evidence of the Mi'kmaq heritage in Nova Scotia, he said.

“So from that perspective, once you consider the artifacts and the features associated with the artifacts and the numerous petroglyphs that are found along the river system – all the way – then you do see that this is a very significant component of Mi’kmaq heritage in Nova Scotia, or Mi’kma’ki,” Burke said, using the indigenous term for the Mi’kmaq Nation.

Mi’kmaq Rights Initiative Archeologist Kaitlin MacLean holds a projectile made of stone at Eel Weir Bridge at Kejimikujik National Park. It’s evidence of Mi’kmaq occupation of the area going back 6,000 years or more.

People’s Lives

“We knew that there were extensive archeological sites here from work that was done in the 1970s,” said MacLean, an archeologist with Mi’kmaq Rights Initiative. “This is just a continuation of that research and what we’re able to learn from that is a continuation of people’s lives. That’s what archeology aims to do is learn about people themselves. It’s not about an arrowhead. It’s about the person who was connected to that arrowhead.”

She’s in awe of what they’ve found, and what it means.

“It’s absolutely incredible the size and the longevity of Mi’kmaq occupation along the Mersey River, especially in this area,” she said. “It’s wonderful and unbelievable. It’s just astounding. We will learn new things. The excavations that were done in the 1970s were just kind of a little bit of testing and this will provide a larger amount of information that we can analyze and make inferences from.”

This year’s archeological work had to be done.

“As part of the replacement of the older bridge with the new bridge we undertook an archeological assessment which suggested we had to do some serious testing in the area,” said Burke. “Essentially the nexus of most of the sites in the park on the river are in that location. So that’s where we had to put a lot of effort and focus in, and perhaps as many as 50 test pits were excavated and thousands of artifacts were found.”

These are samples of the thousands of artifacts dug up at Kejimikujik National Parks this summer. Most are arrowhead, bayonet tips, or scrapers – plus a lot of flakes of stone which were the byproduct of making the tools.

Heritage Protection

MacLean works out of the Kwilmu’kw Maw-klusuaqn Negotiation Office in Millbrook and has been working with Parks Canada on the project to look after Mi’kmaq interests.

“For us this happens through a formal consultation process so that we’re able to provide our input on the archeological methodologies before the construction begins,” she said. “It’s

important to insure the protection of Mi'kmaq archeological heritage and resources. And working together to insure the heritage is protected before there's adverse effects from the construction is important."

She said construction wouldn't take place, or would be halted if there were going to be adverse effects, or damage, or loss of Mi'kmaq archeological sites or resources.

"I think it's working," she said of the process. "I think it provides a good opportunity for both Parks Canada and the Mi'kmaq Nation to work together to develop new collaborations -- opportunities to a develop better and stronger archeological processes overall."

Archeologists Kaitlin MacLean and Charles Burke explain artifacts found at Eel Weir Bridge at Kejimikujik National Park this summer. Most are arrowhead, bayonet tips, or scrapers – plus a lot of flakes of stone which were the byproduct of making the tools.

What They Found

The dig unearthed artifacts that have been taken to the Parks Canada Archeology Lab in Woodside, Dartmouth.

"We found stone tools, projectile points mostly," said Burke. "Tips of bayonets, scrapers, and a great amount of debitage which is the chipped flakes from the creation of stone tools. That is probably the bulk of the thousands of artifacts that were found – this debitage which is in the area. But that's proof I believe that they were actually making the tools there at the site."

Most of the tools are made from chert, a sedimentary rock that when chipped with another stone forms razor-sharp edges.

His belief that the site was in continuous use by the Mi'kmaq for many millennia comes from being able to date many of the artifacts.

"We have artifacts as old as the archaic era which would be five to six thousand years before the present and right up to recent woodland which is 500 to 1,500 hundred years ago," he said. "So it was occupied consistently through all this time period. Maybe not every year but it would be a regular place that Mi'kmaq people would stop. Most likely summering, just given the availability of the natural resources in that location in terms of waterfowl, fish, eels etc."

There are eel weirs there from the 19th century, and Burke describes it as a very narrow location on the Mersey River and an ideal location for not only procuring food but smoking it or drying it.

Parks Canada archeologist Charles Burke holds an arrowhead found during excavations at Eel Weir Bridge at Kejimikujik National Park this summer. The area had to be archeologically assessed and test pits dug before construction of a new bridge could take place.

No Pottery

Burke said there were no post-contact artifacts found in the 2017 excavations. And there were no organics at all.

“In the 1970s they did find 19th century material in the Mi’kmaq context,” he said, and note there was no pottery found which he would have expected. He said the presence of pottery separates the Woodland Era from the previous Archaic Era.

“Throughout Nova Scotia when you’re in Woodland Era sites, you do find pottery,” he said. “We haven’t found any pottery at all in 50 test pits that were excavated here. That’s unusual, but it could be simply a matter of where we placed our tests – we could have been six inches away from an intact pottery vessel.”

Back at the archeology lab, the artifacts they did find will get processed, inventoried, and interpreted as part of the archeological evidence.

“Each artifact – all of its diagnostic attributes will be recorded, an attempt will be made to date it, associate it with a specific time period,” he said. “There’s a plan afoot at the moment to see if we have a sufficient number of artifacts that might be created as reproductions so they can be used on site as part of the interpretive program.”

The archeologist in charge of the project is Dr. Martin Perron in Parks Canada’s Ottawa office. He’s responsible for analyzes and interpretation and an eventual report -- by sometime in the spring of 2018.

In the meantime, construction crews are working on the bridge. There’s a red rope on one side of the river just south of the construction. MacLean said there’s another one across the river. They indicate where workers and machinery can’t go. There’s more history buried there.

Before construction of a replacement bridge could begin at Kejimikujik National Park this summer, the area was excavated in numerous locations and thousands of Mi’Kmaq artifacts discovered.

This is **Exhibit "C"** mentioned and referred to in the affidavit of Charmaine Stevens affirmed before me on this 18th day of January, 2024



A Commissioner of Oaths in and for the
Province of Nova Scotia

GARNET E. BROOKS
A Barrister and Solicitor of
the Supreme Court of Nova Scotia



The American Eel

In April 2006, the Committee on the Status of Endangered Wildlife in Canada assessed the American eel as Special Concern. (Reassessment is planned for April 2012).

This species has been identified as Special Concern by the Committee on the Status of Endangered Wildlife in Canada. It is currently being considered for listing under the federal *Species at Risk Act*.

Currently, protection is provided through the federal *Fisheries Act*. If listed under the *Species at Risk Act*, it will be given additional protection and a *Species at Risk Act* management plan must be developed for this species.

The American eel (*Anguilla rostrata*) belongs to the family Anguillidae. At different life phases it is referred to as glass, yellow or silver eel. It has the following characteristics:

- A long, serpentine body with deeply embedded scales
- The dorsal, caudal and anal fins are combined to one fin that extends from the eel's back around the end of the tail to the belly
- A well-developed *lateral line*, an organ that detects movements in water
- The mouth is located at the tip of the animal, with thick lips and lower jaw slightly longer than the upper jaw

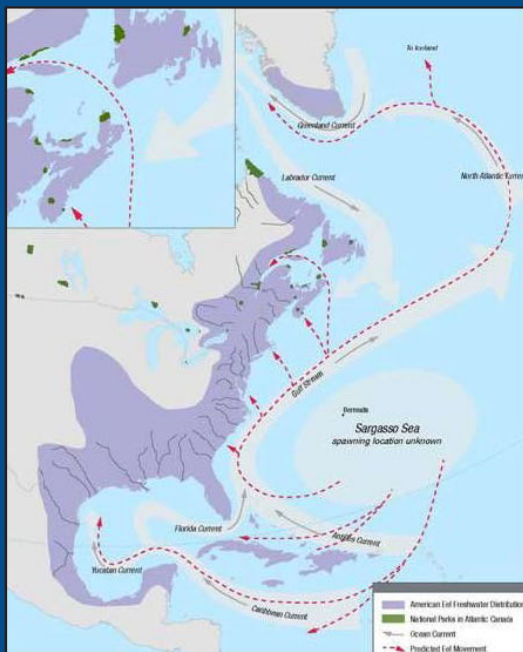


- There are several rows of small teeth on the jaws and roof of the mouth
- Larvae (leptocephali) are transparent and flat and resemble a willow leaf in shape
- Juvenile colouration varies from yellow to green or olive-brown on the belly with a darker shade on the back. They are referred to as "yellow eels"
- Adults are grey with a white or cream-coloured belly and are referred to as "silver eels"
- Adult females may reach more than 1 metre in length; males are generally smaller, at less than 0.4 metres

The American Eel

The perception of eels varies widely across cultures and countries. For some, eels are considered sacred, while others consider them unappealing. Some may use eels for food or ceremonial purposes, while others may fish them for sale. The American Eel has a significant value for Aboriginal people, as the eel is considered a spiritual being and is still an important food source with medicinal properties; mainly with the characteristics of its skin, which is used to wrap sprains and provide relief from cramps and other ailments. For the Mi'kmaq of Newfoundland, the eel represents an important food source that could be procured in both winter and summer.

American eels have a fascinating and complicated life cycle. American eels spawn only once during their life span, and the entire population spawns together in the Sargasso Sea located south of Bermuda. The leaf-shaped eel larvae (called leptocephali) drift on North Atlantic currents for up to one year before reaching coastal waters. They then metamorphose into a life stage where they are transparent and are called glass eels. Leaving the open ocean, they enter sheltered salt-water bays, brackish estuaries or freshwater rivers and begin taking on colour. At this life stage, they are called elvers. Once settled into their rearing habitats, fully pigmented elvers become yellow eels. When eels prepare for their spawning migration, they metamorphose into silver eels.



Disponible en français.



American eels tolerate a wide range of temperatures and salinities, and can reside in a variety of habitats including the open ocean, brackish estuaries, and freshwater rivers and lakes. Their range extends from Greenland to northern South America. American eels are opportunistic feeders, and their diet includes aquatic insects, fish, crustaceans and worms depending on their habitat. At the silver eel stage, they no longer have functional digestive systems and do not eat.

Male and female American eels differ in their size, life expectancy and distribution. Male eels are more common in the southern half of the habitat range and are found primarily in rivers and estuarine habitats. Males mature and migrate to the Sargasso Sea at a smaller size (40 centimetres) and at a younger age (5 to 10 years). Females are more likely to be found in the northern habitat range in freshwater and brackish water, and can be over 100 centimetres in length and as estimated 20 years older before maturing and migrating to the spawning grounds. The oldest recorded American eel was a captive eel which lived to be 88 years old.

The American eel has only one single breeding population. If they are declining in one area, even if declines are not evident elsewhere, the population overall will be in decline. It is of concern that the recruitment of eels in the Upper St. Lawrence River and Great Lakes in Canada has declined by over 99 percent.

Threats

Scientists suspect the largest threats to the American eel relate to habitat quality, fishing and obstacles to their migration. This includes changes made by humans to their habitats, dams, over fishing, changes in ocean conditions, as well as acid rain and contaminants. Still, much needs to be learned about this species to help reverse the effects of such threats.

The decline of the American eel population may affect a variety of birds, fishes and mammals, as it plays an important role in Canada's aquatic biodiversity and our culture.

For more information, visit the *Species at Risk Act* registry website at www.sararegistry.gc.ca and the Fisheries and Oceans Canada website at www.aquaticspeciesatrisk.gc.ca, email the department at info@dfo-mpo.gc.ca, or call 1-866-266-6603.