Ecology Action Centre

SeaChoice.org
for healthy oceans

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Attn: **Jean Ragg**
Fisheries & Aquaculture Administrator
SAI Global / Global Trust Certification
Quayside Business Park, Mill Street
Dundalk, County Louth, Ireland

October 9, 2015

Dear Ms. Ragg,

Re: Comments to The Announcement of the ASC Full-Assessment of Kelly Cove Salmon Ltd. Liverpool, Nova Scotia Site #1205.

The Ecology Action Centre is one of Atlantic Canada's largest and oldest conservation organizations. Our marine program works at the local, regional, national and international levels to secure marine conservation outcomes. We have a long history of engaging in Atlantic Canadian fisheries and aquaculture management, policy and certification processes. An aspect of our current work focuses on the sustainability challenges of marine finfish net pen aquaculture in Nova Scotia, and as such this certification assessment process is of particular interest to us.

We are also founding members of SeaChoice, Canada's Sustainable Seafood program where we work with retail and supply chain partners to improve their seafood purchasing practices. We are submitting our comments as the Ecology Action Centre as well as on behalf of SeaChoice.

Thank you for the opportunity to provide this written comment submission.

Specific Comments:

Kelly Cove Salmon Ltd. Liverpool, Nova Scotia Site #1205 (Coffin Island) has a checkered history:

- 500,000 Rainbow trout escaped during Hurricane Juan in 2003
- 13,000 Rainbow trout escaped in 2012
- 'Asset swap' in 2012 between Coldwater Fisheries and Cooke Aquaculture, swapping the Port Mouton, NS site for the Coffin Island, Liverpool Bay site.
- ISA outbreak in 2013
- Superchill event in 2015

The site is located at the mouth of the Mersey River and near the Medway River. Lobster fishermen in the area are aware of aquaculture waste problems and displacement of lobster fishing grounds at this site. The typical lobster attraction to fish feed after fallow and lobster avoidance once aquaculture fouling accumulates is anecdotally reported.

The site size of four hectares is now considered a small site by industry standards. The size limitations may be affecting the stocking rates, number of cages and respect for lease boundaries. The tidal currents are known to be quite strong in the channel between Coffin Island and the mainland. The extremely shallow depths and shallow sills, which form basins, however, are characteristic of this and many such bays on Nova Scotia's Atlantic coast. Cooke Aquaculture has announced their intention to apply for a larger lease on the Western side of Liverpool Bay, also a traditional lobster fishing ground. This application is anticipated to proceed after the new Nova Scotia Aquaculture Regulations are released this year.

Because of the inconsistent aquaculture activity at the site in recent years, the serial pattern of fallow and pollute is reflected in the Environmental Monitoring Program (EMP) data. One of the clear flaws of the sampling data is that the location of sampling is not consistent from year to year. The highest biomass cages were selected for sampling, as required by the Standard Operating Procedures (SOP's). A cage/sampling location with high sulfide reading in 2014 then, has the biomass reduced resulting in a lower sulfide level in 2015. This is an issue across other Nova Scotia sites as well.

What the EMP data for this site demonstrates is that sulfides accumulate quickly- within a year. For example, in 2014 LVP38 had mean sulfide readings at 94 uM and a year later the readings at LVP38, the sulfides were 6053 uM. Those very high 2015 readings point to the likelihood of a high stocking density. The low sulfide levels in 2013/2014 likely reflect the low stocking densities at that time due to the ISA outbreak and cull of diseased salmon in 2013, with 2014 being a re-stocking year. Despite the strong tidal currents, this is a poor performing site with rapid sulfide accumulation, likely due to the very shallow depths.

The Liverpool Bay Coffin Island site, as with many marine net pen finfish sites in Nova Scotia and New Brunswick, returns to hypoxic or anoxic levels after fallowing when production resumes. In some cases, sulfide levels rise to levels higher than pre-fallow levels[1]. Patterns of serial hypoxic-oxic-hypoxic events at individual farm sites are masked if only annual mean, aggregated and/or summary monitoring data are examined. Inter-annual environmental monitoring results for individual farm sites need to be examined before any assessment of performance and trends in sulfide deposition can be made.

General Comments:

The Aquaculture Stewardship Council (ASC) salmon standard is a global standard that has been more specifically developed in a global context where the vast majority of finfish aquaculture siting takes place in deeper waters with stronger currents than are typically

found in Nova Scotia and many Atlantic Canada locations. There is also little understanding of the implications for the Atlantic Canadian lobster industry, particularly with regards to degradation and displacement of habitat and vulnerability to pesticide use.

Benthic Biodiversity and Benthic Effects:

The ASC 3rd party certification process uses an Allowable Zone of Effect (AZE) – 30 m away from cage edge. The AZE is a step backward from Nova Scotia's Environmental Monitoring Program (EMP), which measures sulfides and other indicators at cage edge. The Nova Scotia EMP Framework states that the marine Environmental Quality Objective (EQO) is to **maintain oxic conditions**.

The AZE is a *sacrifice zone* of 30 m beyond the cage edge within which sulfide levels are allowed to exceed oxic (normal) levels greater than 1500 uM. An example from nearby Port Mouton Bay, Nova Scotia is a transect where a sulfide level at 30 m from cage edge was 40% lower than a borderline anoxic (grossly polluted) level measured at cage edge. Sulfides decrease exponentially outward from cages and sulfides wash off when sediments are re-suspended (Dr. Barry Hargrave). In this site location, waste sediments at several hundred metres distance can be more than 1 metre in depth smothering marine life yet registering oxic sulfide levels.

The 'sacrifice zone' is also a problem when one considers that what happens at the cages is the driver for the many far-field effects that have been documented – degradation of lobster habitat, displacement of lobster fishery, nuisance algae from dissolved nutrients, waste on shorelines and copper contamination in the sea surface microlayer - all over kilometer scale distances. This sacrifice zone also becomes serial as cages are moved about within larger and larger leases.

Biodiversity and Ecosystem Impact:

Far-field effects (beyond the lease site) are difficult to measure and become evident only *after a site is in operation*. In many site locations in Nova Scotia, mitigation would involve reducing the stocking level dramatically, which would make the operation uneconomically feasible.

Any assessment of aquaculture impacts on biodiversity would be limited by the level of scientific information available on the subject – in Canada this subject has had very little study and DFO's Eco-Toxicology Program was closed in the spring of 2013: http://www.dfo-mpo.gc.ca/science/enviro/aquaculture/sok-edc/volume1/burridge-eng.htm

Escapes:

There is a lack of adequate consideration of potential ecosystem or population-scale impacts of escapes of native species in the ASC salmon standard. This has been demonstrated in the literature to be a major point of consideration for marine net pen Atlantic salmon farms in Norway, Scotland, and on the East Coast of North America as well. Criterion 3.4 of the ASC salmon standard should require evidence of scientific research that escapes of native species are not having population-scale impacts on native populations.

We sincerely hope that these comments are considered and taken into account in the draft audit process for Kelly Cove Salmon Ltd. Liverpool, Nova Scotia Site #1205.

Sincerely,

Robert Johnson
Sustainable Seafood Coordinator

[1] Milewski, I. 2014. Aquaculture survey and macro-benthic analysis report. Shelburne Harbour – Former Sandy Point Lease Site October 2013. Conservation Council of New Brunswick, Frederickton, New Brunswick.