

**Ministry of Agriculture**  
**BRIEFING NOTE FOR MINISTER FOR INFORMATION FOR MEETING**  
**with MP Fin Donnelly <<Date>>**

Ref: 186705

Date: September 5, 2017

**Issue:** Meeting with MP Fin Donnelly for a joint briefing on Closed Containment Aquaculture.

**Background:** Since May 2010, MP Fin Donnelly (NDP critic for Fisheries and Oceans) has proposed amending the federal *Fisheries Act* to transition finfish farming in BC to closed containment systems.

The private member Bill C-228 was introduced in February 2016, and called for the federal Minister of Fisheries and Oceans to prepare and implement a plan to support the transition to the use of closed containment facilities. Bill C-228 called on the federal government to provide support measures for affected corporations and protect the jobs and financial security of workers in that sector within eighteen months if this new Act received royal assent. The Bill was defeated after second reading in the House on December 6, 2016.

**Industry Statistics:**

The B.C. salmon farming sector has been operating for more than three decades. Farm-raised salmon is B.C.'s highest valued seafood product (93,000 metric tonnes (MT) worth \$797 million in 2016) and the number one agricultural export. About seventy per cent of the harvest is exported, primarily to the U.S., followed by Japan, China and Hong Kong. Salmon aquaculture is a major employer in rural and remote coastal and First Nations communities. The industry has identified that 5,000 jobs, paying roughly 30 per cent more than the provincial median have been generated. Between 20 and 30 per cent of salmon farm workers in B.C. are First Nations. As of July 2017, there were 126 existing salmon farm tenures and of these 65 were operating with salmon on site.

**Closed Containment Aquaculture:**

"Closed-containment" is a term used to describe a range of technology that aims to minimize interaction between aquaculture operations and the environment. The dominant technology being developed by industry is land-based recirculating aquaculture systems (RAS). Land-based aquaculture is an alternative that has been under development in BC for many years. There are currently no water-based closed containment systems that are feasible for use in the ocean (there are some used in lakes including for steelhead in Lois Lake in B.C.).

There is only one salmon commercial scale facility, Kuterra, operated by the 'Namgis First Nation, is located near Port McNeil (which initiated operations in 2013). The primary objective of the Kuterra project is to demonstrate economic viability for growing market size Atlantic salmon in a closed system on land. Information reported out from the Kuterra project indicates that several technical challenges remain to be resolved, these include; small size of fish, high maturation rates, off-flavours and cataracts. Kuterra has a production capacity of 300 MT as compared to open-net farming that has a production capacity of around 3000 MT. Kuterra has yet to demonstrate financial profitability. The company, including all assets, intellectual property and brand is currently for sale. Total capital and start-up operating cost for the Kuterra project was \$12.7 million (M).

The Province provided a small amount of startup funding (\$157,615) and in-kind staff support at the conception stage of the project before it became Kuterra, which was critical in catalyzing further investment. Most of the funding for Kuterra came from federal (42%), charitable (24%), aboriginal community (0.4%) grants in addition to equity and financing instruments from the 'Namgis First Nation (26%).

Outside of B.C. there is one other closed containment project in Nova Scotia, several projects in Europe and Asia, and interest in developing additional projects in South Africa and the US. All of the projects have

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required very significant investment capital with little publically available information on economic viability. For the most part, profitability remains unproven and a key constraint.

Key approaches used to address profitability include locating farms as close as possible to key markets to reduce transport costs and through economies of scale. The most notable project to attempt this is the Atlantic Sapphire project in Florida which is projected to cost \$817M over the next nine years to build the system with a production capacity of 90,000 MT once fully operational.

The transition from open-net pens to land-based closed containment systems must consider two factors: 1) impact on current investment and opportunity cost to the existing open-net pen salmon farming industry; and 2) addressing the gaps to make land-based salmon farming technically and therefore economically viable.

Based on the number of currently operating open-net salmon farms, transition to land-based systems would result in an estimated lost capital investment of \$330M. In comparison, based on an estimated cost of \$15M/1,000 MT of production, an additional investment of approximately \$1.2B would be required for capital to build the infrastructure to move the industry on land, not including land costs. Additional costs that would be incurred by industry include higher operating costs and the ongoing research and development costs to address unresolved technical issues. If an attractive return on investment can be demonstrated through innovation research to reduce cost of production, capital costs could potentially be amortized over time and through economies of scale.

Currently there are several land-based closed containment farms using RAS technology to grow market size fish including steelhead trout, sturgeon, tilapia as well as several salmon hatcheries that supply young salmon (smolts) for growing out in net pens. These sites are very small (50-150 tonnes) catering to niche, high value markets and because of this, are economically viable.

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- MAACFA has discussed a range of matters related to finfish aquaculture and is anticipated to provide their report with recommendations in the fall or winter of 2017. The B.C. government looks forward to receiving and reviewing the report and any recommendations it includes.

Contact: David Travia, Corporate Governance, Policy and Legislation, 250 356-7640

ED LH ADM JM DM WS

MO Minister's Office

Referral Slip for ID:186731

2018/06/08

Log Type: <b>Email</b>	Action: <b>File &amp; Information</b>	Due:
Batch:	Subaction:	

Type: Stakeholder	Written: 2017/08/30	Resp Type:
John Werring	Received: 2017/09/05	File No.:
Email: jwerring@davidsuzuki.org	Due:	Entered By: jwendlan
	Approved:	Approved By:
	Signed:	Sign By:
	Closed: 2017/09/25	

Address To: Minister	Copy To:
Branch Rsp:	Issue:
X-Ref:	Drafter:
MLA:	Electoral Dist:

**Subject**

Congratulations and request for a meeting related to finfish aquaculture in BC. He is a member of the BC Minister of Agriculture's Advisory Council on Fin fish Aquaculture - panel convened by the former Liberal government prior to the last election.

**Attachments**

Title: 186731_John Werring_Incoming	Version: 1	Type:
File: 186731_john werring_incoming.msg	Approved By:	Last Update: 2017/09/05
Approved:		

**Referral MO Minister's Office -> MO Minister's Office**

From: MO Minister's Office	Sent: 2017/09/05	Status: Completed	Ref Action: Under Review
To: MO Minister's Office	Received: 2017/09/05	Reason:	
Assign To:	Completed: 2017/09/15	Due: 2017/09/07	File No.:

**Referral Comments**

2017/09/05 MO Minister's Office Received in MO and to DMO for decision.

**Referral MO Minister's Office -> MO Minister's Office -> CU-COORD**

From: MO Minister's Office	Sent: 2017/09/15	Status: Completed	Ref Action: File & Info
To: CU-COORD	Received:	Reason:	
Assign To:	Completed: 2017/09/18	Due:	File No.:

**Referral Comments**

2017/09/15 MO Minister's Office Received direction from DM to send regrets. MO sending regrets via email.

## Vajgel, Beatriz AGRI:EX

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**From:** Minister, AGRI AGRI:EX  
**Sent:** Wednesday, August 30, 2017 12:11 PM  
**To:** Johnson, Lisa E AGRI:EX  
**Cc:** Wendland, Justine AGRI:EX  
**Subject:** FW: MEETING REQUEST: Congratulations and reaching out

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

From: John Werring [<mailto:jwerring@davidsuzuki.org>]  
Sent: Wednesday, August 30, 2017 10:54 AM  
To: Minister, AGRI AGRI:EX  
Subject: MEETING REQUEST: Congratulations and reaching out

Hello Lana:

My name is John Werring. I am a senior Science and Policy advisor for the David Suzuki Foundation.

I would like to personally congratulate you on your appointment as Minister of Agriculture.

One of my most active files relates to fin fish aquaculture in BC.

Full disclosure, I am a member of the BC Minister of Agriculture's Advisory Council on Fin fish Aquaculture ... a panel convened by the former Liberal government prior to the last election.

I have some concerns and thoughts about Aquaculture as it is practiced in our waters that I would like to share with you if you have the time.

Is there any opportunity to meet with you to discuss this important issue?

I realize you are really busy trying to get up to speed on various files and are probably swamped with requests for meetings so you might not be able to fit me in to your schedule, but if you can, it would be greatly appreciated.

John

Sent from my iPhone