Ref: 186742 Date: Sept. 5<sup>th</sup>, 2017

**Issue:** Meeting with Federal Minister of Fisheries, Oceans and the Canadian Coast Guard, the Honourable Dominic LeBlanc. (see attached Biography)

#### **Background:**

The Minister of Agriculture has two roles in working with Minister LeBlanc. In addition to the Minister's own mandate for the economic development of the seafood sector, the Minister is also the lead provincial Minister for the Canadian Council of Fisheries and Aquaculture Ministers (CCFAM). Meetings with Minister LeBlanc are also being set up with the Minister of Forests, Lands, Natural Resource Operations, and Rural Development as well as the Minister of the Environment.

The following is a list of proposed topics with background and key messages below.

- 1. Economic development funding "Proposal for a Pacific Fisheries Fund."
- 2. Salmon Farms
- 3. Marine Protected Area (MPA) and Marine Conservation Targets (MCTs).
- 4. Federal Fisheries Act Review.
- 5. Oceans Protection Plan.

## **BC:** Economic Development Funding:

The seafood sector has limited access to federal/provincial funding under the current Growing Forward 2 agreement and this will continue as the agreement is renewed in 2018 as the Canadian Agricultural Partnership. The key gaps for the sector are for investments in innovation, competitiveness and food safety.

There is a new Atlantic Fisheries Fund that addresses these gaps but there is no similar program for Pacific fisheries. At the CCFAM meeting in July 2017, Minister Leblanc committed to considering a proposal for a Pacific Fisheries Fund. DFO officials have indicated that a new Clean Tech Fund for fisheries and aquaculture fund may be announced in October that could address the funding gap for innovation. This fund is likely to require new provincial funding.

### **Key Messages:**

- BC's overarching priority is to better align federal and provincial funding programs with the economic opportunities for fisheries, aquaculture and the seafood sector. BC would like to see coordinated work at the Ministerial level to address funding for the seafood industry, potentially through a new Pacific Fisheries Fund.
- The newly announced Atlantic Fisheries Fund (\$400 Million over 7 years) has resolved this funding issue for Atlantic provinces; however, national funding provided in this fund are much less and will only address market access one of the few activities already eligible under current agriculture programming.

- B.C. is interested in knowing more about potential access to the new federal Clean Tech
  fund for aquaculture and fisheries. This could potentially address funding gaps for
  innovation and competitiveness in the sector.
- New federal and provincial funding for fisheries and aquaculture could help respond to pressures to enhance wild salmon populations as a result of the Cohen Commission, as well as interest in advancing research and development on closed containment.

## **Salmon Farming**

Recent escapes of Atlantic salmon from the Cooke aquaculture facility in Puget Sound, and the ongoing occupation of two salmon farm sites in the Broughton Islands have created increased public interest in salmon farming in BC, including requests to evict salmon farms when not supported by local First Nations and/or to end the industry in BC entirely. B.C. anticipates that Minister LeBlanc may make a statement this week, indicating that: "...In support of the recent BC announcement, DFO will not consider further approval of new salmon aquaculture tenures in BC until after the MAACFA recommendations are available."

The new BC government has committed to implementing the Cohen Commission as well as to providing incentives to transition to closed containment systems where appropriate. As part of his mandate letter commitments, Minister Leblanc provided a comprehensive response to the Cohen Commission last year that included progress to date by the province. Next steps are largely focused on consulting on the Wild Salmon Policy and this could be an area of increased effort by federal and provincial governments.

DFO is also close to announcing a new Clean Tech fund for fisheries and aquaculture. If BC can provide matching funds of at least 10%, this could meet the commitment to incent closed containment aquaculture.

DFO also participates in BC's Minister of Agriculture's Advisory Council on Finfish Aquaculture (MAACFA). It is likely that the committee will have specific recommendations that intend to reduce the risk of impacts on wild fish health. Because DFO is the lead for fish health, if accepted, BC would be advancing these recommendations to DFO in hopes of regulatory changes to implement them.

# **Key Messages:**

- B.C. is committed to the socially and ecologically responsible management of B.C. fisheries, including an environmentally and economically sustainable aquaculture industry.
- BC appreciates the ongoing cooperation and leadership from DFO on these issues and we will need a coordinated approach moving forward.
- There are several initiatives that may help us move forward on this issue:
  - Our Minister's Advisory Committee on Finfish Aquaculture (MAACFA) will provide recommendations this year.
  - DFO is working with provinces to develop options for CCFAM in July 2018 on whether there is a need for a new *Aquaculture Act*; and,

- Canada and BC are considering new funding proposals, including DFO's upcoming Clean Tech Fund and potentially a new Pacific Fisheries Fund.
- It is likely that DFO and BC will eventually need a coordinated response that:
  - Strengthens oversight of fish farms to minimize risks to fish health;
  - o Provides new funding to incent technology innovation in aquaculture;
  - Provides new funding, and potentially new policies, to support the health of wild salmon; and,
  - Establishes a new relationship with First Nations on how governments conduct licensing and tenuring.

## **Marine Conservation Targets**

Canada committed to meeting national marine conservation targets by protecting 5% of marine and coastal areas by 2017 and 10% by 2020 within marine protected areas (MPAs) or through other effective area-based conservation measures.

B.C. has expressed concerns about the fast pace of the work towards meeting the marine conservation targets, as well as the implications for the seafood sector. Most fishery closures in B.C. were assessed as not meeting the requirements to be counted as other effective area-based conservation measures whereas multiple fishery closures in the Atlantic have been. B.C. has the detail of these assessments and provincial staff are evaluating.

B.C. was concerned with late changes that DFO made to fisheries management measures within a Marine Protected Area (MPA) recently established in Hecate Strait, but has confidence that DFO and B.C. have a solid understanding on how best to work together moving forward.

With progress on a large MPA offshore, there will soon be far greater than 10 percent of the Pacific coast covered. Any other conservation efforts in the Pacific should now be focused on quality conservation, such as the development of systematic networks of MPAs in areas under pressure, and not be restricted by urgent timelines to meet the 2020 target.

## **Key Messages:**

- B.C. supports Canada's overall efforts to meet the Marine Conservation Targets.
- B.C. was concerned with late changes to the establishment of a Marine Protected Area in Hecate Strait but has confidence that DFO and B.C. have a solid understanding on how best to work together moving forward.
- With progress on a large MPA in the offshore, there will soon be far greater than 10 percent of the Pacific coast covered within MPAs. Our estimate is that 37 percent of Pacific Canada's Exclusive Economic Zone would be covered within MPAs if the announced area of interest became an Oceans Act MPA.
- Any other conservation efforts in the Pacific can now be focused on quality conservation and not be restricted by urgent timelines to meet the 2020 target.

#### Federal Fisheries Act Review

In September 2016, the Minister of Fisheries, Oceans and the Canadian Coast Guard tasked Parliament's Standing Committee on Fisheries and Oceans (SCOFO) to review and study the 2012 changes to the *Fisheries Act*. B.C. submitted a letter and participated in the CCFAM *Fisheries Act* Review Task Group to ensure the Province's unique interests were considered. SCOFO tabled its final report on February 24, 2017. B.C. supported many of the recommendations, but took issue with those that expand the original scope of the review beyond fish habitat protection as they applied to social and economic fisheries policies in Atlantic Canada. There are indications from officials that a bill may be introduced that addresses both fish habitat protection and socio-economic policies.

#### **Key Messages:**

- B.C. has noted that our views have been well reflected to date in the Fisheries Act review.
- However, we now understand that the scope may be expanded to include socio-economic policies.
- BC, as well as the BC industry, respected the original scope of consultations and did not provide input relating to socio-economic policies.
- We would like to see any new federal bill be limited to the original scope of fish habitat protection and not expand into socio-economic fishing policies.

## **DFO: Ocean Protection Plan**

- On November 6th, 2016, Canada announced the Oceans Protection Plan (OPP). The OPP is a \$1.5 billion national initiative to improve marine safety and protect Canada's marine environment.
- In May 2017, DFO Minister LeBlanc announced \$108.1 million over five years to establish:
  - Seven new lifeboat stations, at Victoria, Hartley Bay, Port Renfrew and Nootka Sound near Gold River;
  - o \$75 million for habitat restoration for species such as Pacific salmon,
  - o 24/7 emergency-response support for existing Canadian Coast Guard stations.
  - Another \$6.85 million over five years will be used to remove derelict boats and educate boaters to prevent vessels from being discarded.
- DFO may provide information as to the status of the OPP and any linkages with Trans Mountain Pipeline. Canada gave its approval for the pipeline expansion late last year. Premier Clark's government granted provincial environmental approval for the project January 11th, 2017. DFO may ask about the current government position with respect to the pipeline.

### **Key Messages:**

Trans Mountain Pipeline discussions are being centrally coordinated and not led by AGRI
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<b>Contact:</b> 386-8299	Lorie Hryciuk, Exe	ecutive Directo	or, Corpo	orate Governance	e, Policy and	l Legislation, 25	50
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#### The Honourable Dominic LeBlanc



(Beauséjour)

Minister of Fisheries, Oceans and the Canadian Coast Guard

The Honourable Dominic LeBlanc was first elected to the House of Commons in November 2000 and re-elected in 2004, 2006, 2008, 2011 and 2015. He has served on the Special Committee on Non-Medical Use of Drugs and the Standing Committees on Fisheries and Oceans, Transport and Government Operations, National Defence and Veterans Affairs, Public Accounts, Procedures and House Affairs, International Trade, Justice and Human Rights, and Foreign Affairs. He has also served as Parliamentary Secretary to the Minister of National Defence.

On July 10, 2004, Dominic was sworn in as a Member of the Privy Council for Canada and appointed Parliamentary Secretary to the Leader of the Government in the House of Commons and Deputy Chief Government Whip. He has served as Opposition Critic for International Trade, Intergovernmental Affairs, Justice, Defence, and Foreign Affairs.

Mr. LeBlanc received a Bachelor of Arts in Political Science from the University of Toronto (Trinity College), a Bachelor of Laws from the University of New Brunswick, and a Masters of Law from Harvard Law School. Academic successes include the Dean's List at the University of New Brunswick's Faculty of Law, a scholarship from the New Brunswick Branch of the Canadian Bar Association, and the Graduating Average Prize from the University of Toronto (Trinity College).

Prior to his election to the House of Commons, Mr. LeBlanc was a barrister and solicitor with Clark Drummie in Shediac and Moncton, New Brunswick. From 1993 to 1996, Mr. LeBlanc was special advisor to the Prime Minister of Canada, the Right Honourable Jean Chrétien.

Mr. LeBlanc is married to Jolène Richard, a judge of the Provincial Court of New Brunswick.

# Ministry of Agriculture BRIEFING NOTE FOR MINISTER FOR INFORMATION FOR MEETING with Jeremy Dunn, Executive Director, BC Salmon Farmers Association, September 13, 2017

Ref: 186650 Date: September 11, 2017

Issue: Meeting with Jeremy Dunn, Executive Director, BC Salmon Farmers Association.

## Background:

- The Executive Director, Jeremy Dunn, of the BC Salmon Farmers Association (BCFSA) has requested a meeting with the minister with himself and a delegation of leaders from the largest farming members to discuss key issues facing the salmon farming sector.
- The BCSFA was established in 1984 and operates as a forum for communication and cooperation within the salmon farming sector, the focal point for liaison between the industry and government, and also provides information to the public and stakeholders about salmon farming, and coordinates industry-wide activities, research, and community events.
- Members include both farmed salmon producers, and many of the companies who provide services and supplies to them. The BCSFA is based in Campbell River, British Columbia.

## **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 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 the industry generated 5,000 jobs, paying roughly 30 per cent more than the provincial median. 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. There are 20 fish farm tenures (in the Broughton Archipelago) due to expire
  in June 2018. Typically the client would apply for a tenure replacement several months in
  advance of the expiry.

#### **First Nations Considerations:**

- There are mixed perspectives from First Nations related to aquaculture in B.C. Some First
  Nations are seeking to have salmon farms removed from their traditional territories. In some
  cases these farms were established in their territories many years ago. This issue has gained
  profile because of the new government's commitment to marine based aquaculture and to the
  United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).
- Other First Nations have become active participants in the salmon aquaculture sector with 20 economic and social partnership agreements in place between companies and coastal First Nations accounting for approximately 80% of total production in the sector.
- First Nations who have chosen to actively participate in salmon aquaculture do so in a variety of
  ways ranging from: employment in hatcheries, farms and processing plants; providing contracted
  services and local environmental monitoring; to ownership of site tenures or full business
  ownership.

#### Discussion:

• Critics of salmon aquaculture suggest farmed fish pose a risk to the health of wild fish through disease transfer, with different experts having different views.

# Ministry of Agriculture BRIEFING NOTE FOR MINISTER FOR INFORMATION FOR MEETING with Jeremy Dunn, Executive Director, BC Salmon Farmers Association, September 13, 2017

- The BC salmon Farmers Association asserts their operations are sustainable and pose little to no risk to wild salmon, which is a view shared by the Ministry's fish pathologist.
- The Province has established two moratoriums on expansion of the finfish aquaculture industry. The first was established through a provincial Order in Council under the Environmental and Land Use Act in 2008, covering all coastal areas north of Klemtu. The second was implemented in 2013 in response to a recommendation of the Cohen Commission that no new salmon farms be approved in the Discovery Islands area until at least September 30, 2020 pending additional research and completion of a disease risk assessment process.
- In 2015, the Province announced a "pause" on approvals for any new salmon aquaculture tenures
  and restrictions on amendments to existing tenures. The "pause" is in place to allow for an
  examination to ensure that aquaculture operations are socially and ecologically sustainable and
  can co-exist with B.C.'s wild fishery resource. On September 30, 2015, B.C. also clarified that it
  would review applications to amend or to relocate tenures for specific purposes such as health
  and safety.
- As part of the pause, government committed to:
  - Establish MAACFA to provide strategic advice about the future of marine-based salmon aquaculture. The members of MAACFA include representation from the aquaculture industry, academia, non-governmental organizations, First Nations and senior government officials. MAACFA is expected to submit a final report with recommendations by the end of 2017;
  - o Examine establishing a protocol relating to use of Aquaculture Stewardship Certification;
  - Examine feasibility of improved microbe protection coming out of the Strategic Salmon Health Research Initiative.

#### **Suggested Response:**

- The B.C. government is committed to implementing the Cohen Commission recommendations and working with the aquaculture industry to move to closed containment where possible.
- I recently met with a number of First Nations leaders on a range of topics at the First Nations Leadership Gathering. I was able to hear first-hand from leaders about some of the concerns their communities have with open pen fish farms in their territorial waters.
- I will be sharing what I've heard, coupled with the recommendations from the upcoming MAACFA report with my cabinet colleagues later in the fall.
- Ensuring that the wild salmon are protected is of the utmost importance to our government. Wild salmon provides sustenance for people and wildlife throughout our province, as well as bringing its own economic benefits. We also know that the fish farming industry brings stable jobs to small communities along our coast.
- This is an issue that won't be solved overnight, but one that will require having everyone at the table to determine solutions going forward. DFO is the lead agency with respect to fish farms in Canada; all discussions on aquaculture licensing must include them. Our government is committed to working with First Nations, the industry and DFO to ensure B.C.'s aquaculture sector is environmentally sustainable and respects First Nations' rights while providing good jobs for British Columbians.

Contact:	David Travia, Co	orporate Governance	ce, Policy and Legislation, 250-356-7640	
ED	AD	M _JM	DM	

# Ministry of Agriculture BRIEFING NOTE FOR MINISTER FOR INFORMATION FOR MEETING with Jeremy Dunn, Executive Director, BC Salmon Farmers Association, September 13, 2017

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# **BRIEFING NOTE – BC SALMON FARMERS ASSOCIATION**

#### **Meeting Attendees:**

#### Vincent Erenst, Managing Director, Marine Harvest Canada, Chair of the Board – BCSFA

Vincent has been the Managing Director of Marine Harvest Canada for 10 years. Marine Harvest farms, processes and distributes 45,000 tonnes of sustainable farm-raised Atlantic salmon each year and directly employs 530 people. Marine Harvest has agreements and positive relationships to operate within the traditional territories of 15 First Nations.

#### Tim Rundle, General Manager, Creative Salmon, Member of Executive Committee – BCSFA

Tim has been the General Manager of Creative Salmon for 10 years, originally joining the company in 1993 as a farm technician. Creative Salmon is North America's only producer of Certified Organic Chinook salmon. Creative Salmon employs over 50 people all living on the West Coast of Vancouver Island. Creative Salmon operates 6 farming sites under protocol agreement with the Tla-o-qui-aht First Nation in Clayoquot Sound.

#### Jeremy Dunn, Executive Director, BC Salmon Farmers Association

Jeremy has been with the BCSFA since March 2014 and manages the daily operations of the member funded industry association. Jeremy was born in Tofino and raised on Vancouver Island. Today he resides in Burnaby.

#### Meeting Agenda.

- 1. Introductions
- Update on salmon aquaculture in B.C. production / economy / environmental certifications

BCSFA will provide a brief update on the recent advancements of the industry focusing on environmental certification and commitment to transparency in operations.

#### 3. First Nations relations – moving forward

Industry will share where it is today on its First Nations relations and its openness to a greater partnership and involvement with First Nations.

#### 4. Understanding Government commitment to closed containment aquaculture

Government has indicated that it would like to work with industry and First Nations to transition towards closed-containment aquaculture in B.C. Industry would like to hear more about this and discuss how we can work together.

#### **Key Industry Facts**

- The BC Salmon Farmers Association represents 50 businesses and organizations throughout the value chain of finfish aquaculture in B.C. Our members account for over 95% of the annual provincial harvest of farm-raised salmon, 100% of the salmon feed produced in B.C., and most of the service and suppliers involved in ensuring that over \$745-million (2016 value) of salmon raised in B.C. gets to domestic and global markets.
- BCSFA members operate an estimated 106 of the 109 licensed and tenured finfish
  aquaculture facilities across the coastal regions of B.C., with 60-70 operating and all
  others resting at any given time.
- Members of the BCSFA harvested 78,000mT of salmon in 2016 about 3% of global production of over 2-million mT. B.C. is the fourth largest global producer of farm-raised salmon and accounts for about 60% of Canada's annual harvest. On average, 70% of all sold in B.C. are farm-raised, 30% are wild-caught.
- Over 50% of total seafood sold in Canada and worldwide is farm-raised.
- Salmon farming in B.C. generates over 5,000 jobs and over \$1-billion towards the
  provincial economy. Jobs are typically year-round and pay 30% above the median
  provincial income (estimated at \$42,000 vs. median employment income in B.C. of
  \$32,888).
- 78% of the salmon raised in B.C. is done so in partnership with First Nations. B.C. salmon farmers have 20 social and economic partnerships with coastal First Nations, and are working towards many more.
- About 30% of the total direct employment of B.C.'s four largest salmon farming companies is First Nations.
- 30% of B.C.'s annual harvest is sold in Canada, 70% is exported. About 85% of all exports are destined for the United States with 15% destined for Asia.
- Every salmon farm in B.C. has at least one audited third-party certification, many have achieved the multiple standards.
  - Cermaq Canada was the first in the world to achieve Best Aquaculture Practices Certification for a salmon farm in 2011. Today, 100% of farms raising Atlantic salmon are certified to this standard.
  - Creative Salmon is North America's only producer of Certified Organic Chinook salmon.
  - Marine Harvest was the first in North America to meet the standards of the Aquaculture Stewardship Council (ASC) for salmon. Today, over 30% of active Atlantic salmon farms have achieved this standard, with farmers pledging to have 100% of active farms certified by 2020.

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#### **BCSFA Marine Environmental Research Program (MERP)**

- The BCSFA has formed the \$1.5-million Marine Environmental Research Program (2015-2020) and appointed an independent Science Advisory Council to select and manage research projects, mainly in the area of wild and farmed salmon interactions.
- The independent Science Advisory Council is made up of the some of the world's foremost experts in wild and farm-raised salmon – representing Vancouver Island University, University of British Columbia, Pacific Salmon Foundation, Fisheries and Oceans Canada, and the leading aquatic veterinarians practicing in B.C. today.
- The Marine Environmental Research Program has developed collaborations, helping to bridge knowledge gaps on B.C.'s wild stocks and coastal environment, on nine research projects providing almost \$600,000 in funding. Six of those projects will be ongoing in 2017/18, which will see BCSFA and its member companies collaborating with 15 organizations and 26 researchers on key projects such as developing a Pacific cleaner fish for sea lice management, revolutionary acoustic tagging of migrating salmon smolts, and further investigation into understanding important pathogens that may be affecting wild or farm-raised salmon.

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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 Kuttera 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

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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#### **Suggested Response:**

- The Province's commitments relate to marine based aquaculture are as follows:
  - 1) Ensure that the salmon farming industry does not endanger wild salmon by:
    - a. implementing the recommendations of the Cohen Commission;
    - b. keeping farm sites out of important salmon migration routes; and,
    - c. supporting research and transparent monitoring to minimize the risk of disease transfer from captive to wild fish.
  - 2) Provide incentives to help the aquaculture industry transition to closed containment where possible.
- The Ministry continues to support the development of closed-containment technology by providing technical advice and extension services on a number of pilot projects currently in B.C., as well as encouraging new projects.
- Transitioning the industry to closed containment aquaculture will take significant new financial investment and time. Industry may not be receptive to move to closed containment operations where financial viability is still unproven.
- Government will need to strategically focus investments and provide the best possible chance of
  developing a viable and sustainable aquaculture industry as well as ensuring economic development
  opportunities and jobs in rural coastal communities.
  - o There may be a longer term vision of moving the entire industry to land-based aquaculture

- There are also medium term opportunities to increase the use of closed-containment to reduce the grow-out time for open-net pen aquaculture. This has the potential to significantly reduce the risk to wild salmon.
- 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.

Contac	ct: David Travia,	Corporate	e Governance, Po	olicy and l	Legislation, 250 356-7640
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Ref: 186743 Date: September 7, 2017

Issue: Meeting with Tony Allard Chairman, Wild Salmon Forever

# Background:

- Mr. Allard is the Chairman of Wild Salmon Forever (WSF) and the owner and proprietor of Good Hope Cannery lodge, a private sport-fishing lodge in Rivers Inlet.
- He recently donated \$100,000 to support the Simon Fraser University led salmon ecology research on Rivers Inlet sockeye salmon, and the Wannock Chinook Protection Plan, which is building a hatchery at the head of Rivers Inlet.
- He also pledged \$250,000 in 2014 to the Salish Sea Marine Survival Project, a five-year research
  effort to determine the causes of major declines in coho and chinook salmon. The funding was
  directed to the Strategic Salmon Health Initiative to inventory pathogens suspected of causing
  mortality in Pacific salmon using genetic research tools to study wild, hatchery, and aquaculture
  salmon in BC and the possible transfer of harmful microbes between salmon in BC waters.
- Mr. Allard has been personally supporting research to address this issue for many years.
- Good Hope Cannery lodge has donated several ecologically sensitive land parcels to the Nature Conservancy of Canada. Mr. Allard also supports the Pacific Salmon Foundation and the Salish Sea Marine Survival Project.
- Mr. Allard is a member on the Minister of Agriculture's Advisory Council on Finfish Aquaculture (MAACFA, see Appendix 1 Terms of Reference).

#### First Nations Considerations:

- There are mixed perspectives from First Nations related to aquaculture in B.C. Some First
  Nations are seeking to have salmon farms removed from their traditional territories. In some
  cases these farms were established in their territories many years ago. This issue has gained
  profile because of the new government's commitment to marine based aquaculture and to the
  United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).
- Other First Nations have become active participants in the salmon aquaculture sector with 20 economic and social partnership agreements in place between companies and coastal First Nations accounting for approximately 80% of total production in the sector. First Nations who have chosen to actively participate in salmon aquaculture do so in a variety of ways ranging from: employment in hatcheries, farms and processing plants; providing contracted services and local environmental monitoring; to ownership of site tenures or full business ownership.

#### **Discussion**:

- Critics of salmon aquaculture suggest farmed fish pose a risk to the health of wild fish through disease transfer, with different experts having different views.
- The BC salmon Farmers Association asserts their operations are sustainable and pose little to no risk to wild salmon, which is a view shared by the Ministry's fish pathologist.
- The Province has established two moratoriums on expansion of the finfish aquaculture industry. The first was established through a provincial Order in Council under the Environmental and Land Use Act in 2008, covering all coastal areas north of Klemtu. The second was implemented in 2013 in response to a recommendation of the Cohen Commission that no new salmon farms be approved in the Discovery Islands area until at least September 30, 2020 pending additional research and completion of a disease risk assessment process.

- In 2015, the Province announced a "pause" on approvals for any new salmon aquaculture tenures and restrictions on amendments to existing tenures to allow for an examination to ensure that aquaculture operations are socially and ecologically sustainable and can co-exist with B.C.'s wild fishery resource. On September 30, 2015, B.C. also clarified that it would review applications to amend or to relocate tenures for specific purposes such as health and safety.
- As part of the pause, government committed to:
  - Establish MAACFA to provide strategic advice about the future of marine-based salmon aquaculture. The members of MAACFA include representation from the aquaculture industry, academia, non-governmental organizations, First Nations and senior government officials. MAACFA is expected to submit a final report with recommendations by the end of 2017;
  - o Examine establishing a protocol relating to use of Aquaculture Stewardship Certification;
  - o Examine feasibility of improved microbe protection coming out of the Strategic Salmon Health Research Initiative.
- As a MAACFA member, Mr. Allard expressed initial dissatisfaction with the original composition of the Council, noting he wanted to see a broader representation of First Nations perspectives, particularly from those opposed to open net-pen salmon farming.
- Based on this feedback, additional First Nations representatives were invited to participate on the Council (see Appendix 2 – MAACFA Membership List).

### **Suggested Response:**

- The B.C. government is committed to implementing the recommendations of the Cohen commission and working with the aquaculture industry to move to closed containment where possible.
- I recently had the opportunity to meet with a number of First Nations leaders on a range of topics at the First Nations Leadership Gathering. I was able to hear first-hand from leaders about some of the concerns their communities have with open pen fish farms in their territorial waters.
- I will be sharing what I've heard, coupled with the recommendations from the upcoming Minister of Agriculture's Advisory Committee on Finfish Aquaculture (MAACFA) report with my cabinet colleagues later in the fall.
- Ensuring that the wild salmon are protected is of the utmost importance to our government. Wild salmon provides sustenance for people and wildlife throughout our province, as well as bringing its own economic benefits. We also know that the fish farming industry brings stable jobs to small communities along our coast.
- This is an issue that won't be solved overnight, but one that will require having everyone at the table to determine solutions going forward. DFO is the lead agency with respect to fish farms in Canada; all discussions on aquaculture licensing must include them.
- Our government is committed to working with First Nations, the industry and Fisheries and

Oceans Canada to ensure B.C.'s aquaculture sector is environmentally sustainable and respects First Nations' rights while providing good jobs for British Columbians					
Contact: David Travia, Corporate Governance, Policy and Legislation, 250-356-7640					
ED LH ADM JM DM WS					

# Appendix 1 - Minister of Agriculture's Advisory Council on Finfish Aquaculture (MAACFA)

Terms of Reference

### Background:

In July, 2015, the Province announced that it will examine the rules and restrictions that guide the application and approval process to ensure that aquaculture operations are socially and ecologically sustainable and can co-exist with British Columbia's wild fishery resource. Specifically, the government will:

- 1. Strike a Minister of Agriculture's Advisory Council on Finfish Aquaculture that will include members from the aquaculture industry, non-governmental organizations and First Nations, as well as the Ministry of Agriculture and the Ministry of Forest, Lands and Natural Resource Operations.
- 2. Examine establishing a protocol for receiving advice from the Aquaculture Stewardship Council in regard to tenures for new aquaculture sites.
- 3. Examine the feasibility of improved microbe detection at aquaculture sites arising from the work being undertaken by Genome BC in tandem with the other scientific evidence already available to the Province.

Recognizing the nature of the work to be undertaken by the Minister of Agriculture's Advisory Council on Finfish Aquaculture (MAACFA), the Province also stated in July 2015, that while these actions are being undertaken, the Province will not consider any further approvals for new salmon aquaculture tenures.

### Scope and Purpose

MAACFA will provide strategic advice and policy guidance to the Minister of Agriculture (Minister) about the future of, and issuance of new Crown land tenures for, marine-based salmon aquaculture in BC.

MAACFA's deliberations may include whether or not the Province should pursue development of marine-based salmon aquaculture in BC and if so, should yield recommendations to guide the application and approval process to ensure that aquaculture operations are socially and ecologically sustainable and can co-exist with British Columbia's wild fishery resource.

#### **Principles**

MAACFA will seek to provide a balanced and reasoned approach, mindful of divergent views, supported by staff and subject matter experts.

MAACFA is expected to reach consensus in providing recommendations. If not possible, MAACFA should reflect the different views of the members. MAACFA is not a decision-making body.

#### Operation

MAACFA may receive presentations from interested parties. MAAFCA may be asked to review and comment on proposals and will have the ability to request briefings from the industry or other experts.

### **Confidentiality**

Conversations within MAACFA must be held in confidence. MAACFA members must not discuss or disclose the nature or content of these conversations with the public or the media as Cabinet confidentiality applies to advice and recommendations to be considered by a Minister or by the Executive Council (Cabinet). Similarly, written submissions and background materials prepared to inform MAACFA discussions must not be disclosed publically.

#### Membership

MAACFA will report directly to the Minister. MAACFA will have an appointed Chair and Vice-Chair to provide neutral and unencumbered leadership. The Ministry of Agriculture (AGRI) will provide the supporting secretariat. Officials from AGRI, the Ministry of Forests, Lands and Natural Resource Operations (FLNR) and the Ministry of Environment (ENV) will support the secretariat as required. MAACFA will be comprised of representatives from:

- First Nations (1 or more members, 1 alternate)
- Marine-based finfish aquaculture producers (1 or more members, 1 alternate)
- Non-governmental organizations (1 or more members, 1 alternate)
- Academia (1 or more members, 1 alternate)
- Marine planning (1 member, 1 alternate)
- Seafood industry/wild salmon harvest and processing (1 member, 1 alternate)
- o The Deputy Minister of Agriculture or designate (1 ex officio member and advisor )
- The Deputy Minister of Forests, Lands and Natural Resource Operations or designate (1 ex officio member and advisor)

Fisheries and Oceans Canada (DFO) will participate as an observer and provide advice as appropriate.

In addition, other representatives with technical and academic expertise in the BC agrifoods and seafood sectors may be involved in short-term, task-focused working groups.

#### Term

MAACFA will sunset 18 months after endorsement of the Terms of Reference.

Immediately prior to dissolution, MAACFA will deliver a final report to the Minister.

#### Expenses

The Ministry will be responsible for travel costs, subject to government travel guidelines and requirements.

#### Secretariat Support

- James Mack, Assistant Deputy Minister, Ministry of Agriculture (AGRI), and Executive lead for the BC Seafood Secretariat
- o Jim Russell, Director, Strategic Seafood Initiatives (AGRI)
- Officials from AGRI, FLNR and ENV as required.

The Ministry will provide meeting space, teleconferencing access and logistical organization.

# Meeting schedule

MAACFA will report to the Minister on progress, within 100 days of establishment and subsequently as directed by the Minister.

Meetings will be convened at least once per quarter or more often as required.

# **Appendix 2 - Minister of Agriculture's Advisory Council on Finfish Aquaculture - Membership List**

Membership List	
Member	Organization
Tony Allard	Chairman,
	Wild Salmon Forever
Keith Atleo	Operations Manager,
	Ahousaht First Nation and the Ahous Business Corporation
John Bones	Principal,
	J.B. Consulting (Land Use Planner)
Dr. Christina Burridge	Executive Director,
Ü	BC Seafood Alliance
Ernie Crey	Chief,
	Cheam First Nation
Bill Cranmer	President, Kuterra
Jiii Graiiiiiei	Hereditary Chief of the 'Namgis First Nation
Jeremey Dunn	Executive Director,
Jeremey Dami	BC Salmon Farmers Association
Dr. Anthony Farrell	Canada Research Chair,
Dr. Anthony Farren	Faculty of Land and Food Systems & Department of Zoology,
	University of British Columbia
Larmy Croba	·
Larry Greba	Director,
Carra Managa	Kitasoo Economic Development Corporation
Saya Masso	Natural Resource Director
	Tla-o-qui-aht First Nation
Dr. Don Noakes	Dean,
	Faculty of Science and Technology, Vancouver Island University
Rebecca Reid	Regional Director General,
	Fisheries and Ocean Canada
Brian Riddell	President and CEO,
	Pacific Salmon Foundation
Tim Sheldon	Deputy Minister,
	Ministry of Forests Lands and Natural Resource Operations
Lee Spahan	Chief,
	Coldwater First Nation
Paul Sprout	B.C. Commissioner,
	Pacific Salmon Commission
Wes Shoemaker	Deputy Minister,
	Ministry of Agriculture
John Werring	Senior Science and Policy Advisor,
_	David Suzuki Foundation
Tessa Terbasket	Individual First Nation member
Richard Harry	President, Aboriginal Aquaculture Association
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# BRIEFING NOTE FOR DEPUTY MINISTER FOR INFORMATION FOR MEETING with Humane Society International – Canada, Michael Bernard, Political Officer and Rebecca Aldworth, Executive Director, Tuesday, September 19, 2017

Ref: 186809 Date: September 15, 2017

Issue: Ministry of Agriculture's role and work on animal welfare issues.

**Background**: Humane Society International (HSI) is the global arm of the Humane Society of the United States. Among other activities, HSI actively petitions against the dog and horse meat trade, fur farming, seal hunting, and the use of cages and crates for poultry and pigs. HIS Canada has met with the Federal Government, Saskatchewan and Quebec to enquire about government policies related to animal welfare, to promote HSI policies and build government relations. The Ministry of Agriculture (AGRI) is responsible for developing policy, maintaining legislation, conducting research and providing education to improve animal welfare. Animal welfare refers to the quality of an animal's life and its ability to cope with the conditions in which it lives. Animal welfare is broader than the absence of pain and suffering; it is an evaluative concept which is both science-based and values-based.

Within B.C., the *Prevention of Cruelty to Animals Act* (PCAA) is the primary piece of provincial animal welfare legislation and falls under the responsibility of AGRI. It provides a legislative enforcement mandate for the British Columbia Society for the Prevention of Cruelty to Animals and enables standards of care for animals, including duties of people responsible for animals and operators involved in regulated activities (i.e., breeding, care, keeping, training, use, transportation, disposition, assembly or killing of animals.). The PCAA carries the highest provincial penalties for individuals found guilty of animal cruelty, with fines of up to \$75,000 and imprisonment for up to 24 months.

Other AGRI legislation supports positive animal welfare outcomes through the promotion and management of animal health and disease management, including the *Animal Health Act* and its regulations (e.g., Fur Farm Regulation) and the *Natural Products Marketing (BC) Act* (NPMA) and its provisions (not yet in force) related to biosecurity programs in the supply managed sector. In recent years, AGRI has undertaken a number of initiatives to strengthen animal welfare (see Appendix 1 for more information).

#### Shark fins:

Shark fins are used in the preparation of shark fin soup. Growing demand in China is endangering global populations of larger sharks. The practice of shark finning, where large sharks are harvested, their fins removed and their bodies thrown back into the ocean, has raised ethical and ecosystem concerns around the globe. In 2010, 17 tonnes of shark fins were imported into B.C. Since then, imports have averaged 74 tonnes a year reaching 93 tonnes in 2016.

B.C. has commercially fished a small benthic shark, commonly called the spiny dogfish, for more than 100 years. Currently, the spiny dogfish is harvested mainly for its meat, which is typically exported to Europe, although the tails and fins are used for inexpensive versions of shark fin soup in Asia.

# BRIEFING NOTE FOR DEPUTY MINISTER FOR INFORMATION FOR MEETING with Humane Society International – Canada, Michael Bernard, Political Officer and Rebecca Aldworth, Executive Director, Tuesday, September 19, 2017

In 2011, the B.C. spiny dogfish fishery received MSC certification as a sustainable fishery to increase access to the European market. Despite MSC certification, concern over the state of shark populations world-wide has sharply reduced demand and impacted the B.C. fishery. Sales have declined from a high of nearly \$12 million in 2003 to \$0.4 million in 2016. In 2013, B.C. spiny dogfish fishers elected not to renew MSC certification because of poor market conditions.

**First Nations Considerations**: Previously, the Ministry has identified that some HSI policies may conflict with traditional First Nations animal harvesting activities. Some First Nations have been employed in fisheries and processing plants that depend on harvest of spiny dogfish.

**Discussion**: AGRI is engaged in both provincial and national animal welfare policy development. A number of leading organizations are working to improve the welfare of farm animals including the National Farm Animal Care Council, The National Farmed Animal Health and Welfare Council, the Federal/Provincial Animal Welfare Working Group and the Canadian Council of Chief Veterinary Officers.

This collaborative approach has led to development of national humane slaughter protocols, ongoing revisions of the national Codes of Practice, and the subsequent development of provincial regulations that aim to target irresponsible dog and cat breeders.

The Government of Canada has banned the practice of shark finning in domestic waters. The Province could use its powers over commerce to restrict possession, sale, trade and distribution of shark fins in B.C.

#### **Suggested Response:**

- Animal welfare is a priority in B.C. and Government expects all British Columbians to treat animals with care and respect.
- In March 2017, amendments to the *Prevention of Cruelty to Animals Act* (PCAA) enabled the creation of a licensing and/or registration system for commercial breeders of dogs and cats.
- The new Minister of Agriculture will be reviewing the legislation and consider the next steps that the Province may wish to take on this issue.
- Ministry staff will continue to be engaged provincially and nationally to develop strategies promoting animal welfare.

# Shark finning:

- The Province recognizes the public concern with harvesting and finning of large pelagic sharks and supports the federal ban on the practice of finning in Canadian waters.
- Fisheries and Oceans Canada (DFO) is responsible for regulating what can and cannot be harvested from Canadian waters.
- The Canadian Food Inspection Agency is responsible for regulating what foods can and cannot be imported into Canada, including shark fins; however, shark fins are still imported and consumed in Canada.

# BRIEFING NOTE FOR DEPUTY MINISTER FOR INFORMATION FOR MEETING with Humane Society International – Canada, Michael Bernard, Political Officer and Rebecca Aldworth, Executive Director, Tuesday, September 19, 2017

• There has been a commercial fishery in B.C. for the spiny dogfish shark for over 100 years. This fishery received Marine Stewardship Council (MSC) certification as a sustainable fishery from 2011 – 2013, but now has very limited harvest.

		Corporate Governance, Po	olicy and Legislation, 250-356-5814
A/ED	DT	ADM JM	DM WS

# BRIEFING NOTE FOR DEPUTY MINISTER FOR INFORMATION FOR MEETING with Humane Society International – Canada, Michael Bernard, Political Officer and Rebecca Aldworth, Executive Director, Tuesday, September 19, 2017

### Appendix 1 - Ministry of Agriculture Initiatives to Strengthen Animal Welfare

### Companion Animals/Working Dogs:

- Implemented the Sled Dog Standards of Care Regulation under the PCAA in February 2012 to regulate commercial sled dog operators by establishing legal requirements for such things as containment, health, and record-keeping.
- Assisted the BCSPCA by hiring a contractor to provide training to their constables on the Sled Dog Standards of Care Regulation to enable them to effectively conduct their duties as prescribed under the PCAA.
- Implemented regulations under the PCAA to define "reasonable and generally accepted practices of animal management" for dairy operators in 2015 and cattery and kennel operators in 2016, based on national codes of practice.
- Amended the PCAA in March 2017 to enable licencing and/or registration systems to be set up for
  regulated activities. Regulations are pending to bring the new system into force, with a stated of intent
  to regulate commercial breeders of cats and dogs.

#### On Farm Animals/Livestock:

 Supported the BC Milk Marketing Board (BCMMB) and BC Dairy Association in developing and implementing education and training, and other programs to ensure the BCMMB has relevant authorities to address processor concerns related to animal welfare, in response to an animal cruelty incident at a Chilliwack dairy farm.

## **Transportation:**

- Supported the BC Farm Animal Care Council to work with BC Ferries in 2012 to make animal
  welfare improvements for livestock being transported on ferries, including a no-fee reservation queue
  for livestock transporters and staff training about animal welfare issues.
- Initiated research in partnership with University of British Columbia (UBC) to collect information and assess farm animal welfare at critical control points (e.g., auction yards, assembly points), with a particular focus on cull dairy cows and bull calves.

#### Government Funding:

Broader government support for animal welfare includes targeted funding to the BCSPCA based on identified needs, including \$5M in both 2015 and 2017 to support the eight-year facilities upgrade plan, a \$100,000 grant in 2011 to defray the costs of investigating sled dog cruelty allegations and a \$250,000 grant in 2010/2011 from the B.C. Gaming Commission for spay/neuter programs. In addition, the province has provided sponsored Crown leases for many of BCSPCA facilities.

Ref: 187043 Date: October 20, 2017

**Issue**: Confirm the approach including the consultation plan to regulate commercial dog and cat breeders and brokers in B.C.

**Background**: On March 16, 2017, amendments to the *Prevention of Cruelty to Animals Act* (PCAA) received Royal Assent. The amendments would enable the creation of a licensing and/or registration system for commercial breeders of dogs and cats and accompanying inspections against minimum standards of care. This is a significant milestone to target irresponsible commercial breeders of dogs and cats following two high-profile seizures at suspected puppy mills in the Lower Mainland. The intention of the PCAA amendment is to create enabling legislation that allows the province to regulate commercial dog and cat breeders and those that sell the offspring.

When the PCAA was raised in the house there were additional considerations made. These included the following points:

- Require pet shops to be licensed and to show proof that the pet shops are sourcing from licensed breeders.
- Require brokers to be licensed and to source only from licensed breeders.
- Require breeders to be educated on breeding as a condition of licensing.
- Require breeder and brokers of other pets (e.g. rabbits), beyond puppies and kittens, to be licensed.
- Require brokers (pet stores) to keep records of how they obtained animals that they wish to sell;
   and require they provide, in writing, acknowledgment to consumers that animals to be purchased have come from registered or licensed breeders.
- Government must engage with the SPCA on the level of enforcement that is required to implement the system and about \$750,000 to \$1.8 million is needed to achieve this.

The size and scope of the dog and cat breeding in BC is poorly documented. Rough estimates drawn from data in a 2008 Ipsos Reid survey suggests that there are approximately 900,000 dogs and 1.2 million cats in BC. The estimated total offspring created through purposeful breeding for sale is 30,000 (25,500 puppies and 5,000 kittens) per year. Total number of breeding establishments is estimated at 1,850. It is more common for dogs to be purchased through breeders, while cats most often come from friends, humane societies or are given away. Registered purebred and pedigreed animals represent a small portion of breeding activity at about 30% for dogs and 5% for cats

The BC Society for the Prevention of Cruelty to Animals (BCSPCA) estimates that out of 10,000 complaints in 2015, about 200 complaints are specifically against breeders of cats and dogs. There have been very little complaints that are specifically related to other types of companion animals in B.C. Most of the complaints were resolved through education and written orders. This information suggests that the number of the irresponsible breeders is limited to a small group of people and that most breeders are responsible.

The Wildlife Act Controlled Alien Species (CAS) Regulation controls the possession, breeding, shipping, and releasing of alien animals (i.e. animals that are not native to B.C.) that pose a risk to the health and safety of people or the environment. Most of the animals that fall under this regulation are reptiles, amphibians and fish that may be bred or sold as pets. The mammals and birds listed in this regulation would most often be found in zoos, and are not suitable pets.

**Discussion:** Ministry staff conducted consultations in 2016 to undertake research to better identify the problem of irresponsible breeders in B.C., and to gather information from known breeding organizations, experts in the field (i.e. veterinarians that are breeding), and from the B.C. SPCA to inform the scope of the

overall approach. The BCSPCA provided information to the ministry that there are very few breeders of other types of companion animals such as rabbits, and guinea pigs in B.C. and most of these are imported and sold through pet stores.

After gathering the information with key stakeholders and in discussions with the BCSPCA, the focus on regulating commercial dog and cat breeders and those that sell the offspring would put in place a system that would identify and address the most commonly occurring irresponsible breeders of dogs and cats in B.C. The proposed new system would also require sellers (that now will include pet stores) to be registered and maintain records to ensure traceability back to the breeder.

In order for the new authorities to come into force, a regulation is required. The regulation will include the details of the new registration or licensing system such as;

- registration or licensing fees, fines, administration costs;
- definitions of breeders and sellers:
- · enforceable standards of care for breeding; and,
- compliance and enforcement activities, including any fines or fees for non-compliance.

The implementation plan for the new system will include a mandatory education component for breeders, delivered by the designated agency, to ensure they understand the regulatory framework and standards they must comply with. The designated agency will also be tasked with driving information and awareness to consumers so they will be knowledgeable about the new system and the importance of purchasing from a registered breeder or seller.

The regulation will also identify the "designated agency" responsible to administer the new registration or license system. Ministry staff has also been working with the BC SPCA to undertake research on the development of both types of systems, a registration or licensing system, the potential implications of each, potential fees that would be charged, and the implementation costs for a designated agency. This will be the responsibility of the designated agency that will be responsible for implementing and managing the new system. The BCSPCA has recently confirmed that they are interested in taking on this role.

Once the new system is confirmed and the potential costs are identified, a Treasury Board Submission will be required to seek funding for the "designated agency" responsible for administering the registration or licensing system, as well as seek approval for future fines and fees.

Ministry staff is recommending further consultation with key stakeholders and technical experts to assist in the development of standards of care to ensure the regulations achieve the intended goals, while minimizing burden on businesses. Ministry staff is seeking confirmation of the approach and approval of the consultation plan to inform the development of the regulation. (Appendix 1: Consultation Plan - Developing Technical Aspects of Dog and Cat Breeding Regulation).

Additional work will be required with Union of BC Municipalities to ensure there is an opportunity for local governments to participate in the development of the system given that some have recently initiated bylaws that regulates the selling of pets in their communities.

In discussions with ministry staff, staff and the BCSPCA are proposing that a registration system be considered rather than a licensing system given that it will be administratively easier to implement, less costly, identify unknown breeders in B.C., and achieve the same goals of addressing irresponsible breeders. The new system can be monitored and easily modified to include other companion animals should it be found through the monitoring of sellers that future standards for other companion animals needs to be put in place through regulation.

Once approved, the consultation plan could be launched in November 2017, conclude end of January 2018, with recommendations to the minister for final approval February 2018. Recommendations will then be brought forth to the minister to confirm the standards, the designated agency, the proposed budget and the timelines to fully implement the new registration or licensing system. Once the minister provides final direction, a regulation will be created and the TB submission will be submitted at that time. The designated agency will require time to implement the new system, once funding is approved by Treasury Board.

#### **Next Steps:**

The ministry staff will move forward on this important initiative to address irresponsible breeders once direction is provided on the following:

- Confirm the scope of the new system to:
  - o focus initially on commercial dog and cat breeders (pedigreed, purebred or mixed breed) located in BC, regularly producing puppies and kittens for sale;
  - include mandatory registration of those who sell (brokers and pet stores) puppies or kittens from BC breeders with requirements to display a sales number in any advertisement, keep records and comply with selected parts of the standards of care that apply to breeders;
  - o put in place in the system the ability to monitor for animal welfare issues on other companion animals (e.g. rabbits or guinea pigs); and,
  - develop enforceable standards of care for breeding dogs and cats, definitions, fees, fines, and administration (See Appendix 2 - British Columbia – Industry Standards of Care for Breeders and Sellers / Brokers of Dogs and Cats).
- Confirm the consultation plan and timelines that includes the list of dog and cat breeders (recommended by Jane Thornthwaite, MLA North Vancouver-Seymour).
- Confirm a public information bulletin news release that invites the wider public to submit comments to a generic email address. Allows us to reach pet stores and mixed-breed dog and cat breeders.
- Initiate discussions with BCSCPA to proceed on confirming designated agency and assisting in the development of the new system, including system costs for startup and ongoing administration.

Approved / Not Approved					
Minist	ter Lana Popham			Date Signed	
Contact: Anna North, Corporate Governance Policy and Legislation Branch, 250-356-5814					
ED	LH	ADM _JM	DM WS		

#### Appendix 1: Consultation Plan - Developing Technical Aspects of Dog and Cat Breeding Regulation

#### Policy Problem:

Dogs and cats can be easily exploited by irresponsible people during the activity of breeding. The province has decided to develop a regulation to enable either a registration or licencing system that will provide for monitoring, and taking action against, irresponsible dog and cat breeders in British Columbia and sellers of their offspring.

### Purpose of consultation:

The Ministry intends to formally engage with the BCSPCA, other organizations and a subset of commercial dog and one cat breeder that were identified in consultations conducted spring 2016. The purpose of the consultation is to:

- 1. Obtain relevant information on technical aspects of the regulation and gain perspectives, which will assist the Ministry with policy and regulatory decision making related to dog and cat breeding establishments, including creating adequate standards of care;
- 2. Understand implications to breeders and possible mitigation of impacts, ensuring regulatory burden is minimized; and,
- 3. Ultimately, ensure the proposed regulations are informed by a broad range of expertise and data.

Consultation materials have been drafted and include; letters of invitation to participate, a copy of the draft standards of care to provide comments on, and a list of formal questions for stakeholder response. Questions will include the following topics:

- What is the criterion a person needs to register or obtain a licence?
- What parameters are set regarding sales at pet stores?
- Review of draft standards of care document and provide evidence based feed-back.
- Investigate any specific requirements for CKC breeders.

#### Participation options that will be used are:

- In person meetings for those people that are in Victoria, or willing to travel to Victoria at their own expense;
- Teleconferences: multiple teleconferences can be scheduled as needed, according to stakeholder needs;
- Written submissions will be allowed, given that commenting on the draft Standards of Care
  document may take some time to review, written comments in track changes or a separate letter of
  comments will be accepted.

# Targeted Stakeholder Groups:

#### **Organizations**

- Canadian Kennel Club (CKC) BC Chapter
- Canadian Cat Association (CCA) BC Chapter
- Pet Industry Joint Advisory Council of Canada (PIJAC)
- BC SPCA
- College of Veterinarians of British Columbia
- Canadian Veterinary Medical Association BC Chapter
- Humane Society International/Canada
- Local Governments (through UBCM)

#### **Dog and Cat Breeders**

• Catherine King, Splendent Poodles

- Deborah Anderson, Dobermans and Whippets
- Dawne Deeley, Tsar Shadow, Carelian Bear dogs and other very rare breeds
- Heidi Gervais, Professional dog handler
- Fred Haywood, Procyon Afghans and Irish Wolfhounds
- Catherine Eiswerth, Supernova Doberman
- Dr. Ken Langelier (Veterinarian and cat breeder)

## Consultation Process and Timeline:

Actions:	Details:	Date(s):
Approval of consultation plan	<ul> <li>Finalize plan and list of stakeholders, including:         <ul> <li>Method of outreach</li> <li>Time period to match regulation timeline</li> <li>Schedule and conduct briefings as needed</li> </ul> </li> <li>Develop consultation materials for approval:         <ul> <li>Criteria for registration and or licencing</li> <li>Sales at pet stores</li> <li>Draft standards of care (draft complete)</li> <li>Specific requirement for CKC breeders (e.g. can members have equivalency, other)</li> </ul> </li> <li>Approval briefings will be managed according to the postelection transition schedule, which may affect the timing of the consultations.</li> </ul>	October 2017
Start consultation	<ul> <li>Invitation to targeted stakeholder groups for in-person, teleconference and/or video-conference meetings</li> <li>Support providing written comments as an option.</li> </ul>	November 2017
Conduct consultation meetings	<ul> <li>Facilitate in-person, teleconference and/or video-conference meeting with key stakeholder groups</li> <li>Gather feedback on key policy issues</li> <li>Accept written comments.</li> </ul>	November/December 2017
All consultations complete	<ul> <li>Consultation with key stakeholders (e.g. UBCM)</li> <li>Review consultation outcome and formulate recommendations for minister review and approval.</li> </ul>	January/February, 2018
Recommendations and direction to minister	<ul> <li>Decision note to be developed with options that will be used to inform drafting instructions for regulation development.</li> <li>Receive decision and direction on proceeding with specific regulation options based on consultation.</li> </ul>	March 2018
Proceed with regulation and TB submission	<ul> <li>Legislation unit to take the lead on working with LSB to draft regulation.</li> <li>Treasury Board submission for start-up and implementation costs, and any association fines and fees approval.</li> <li>Work with Designated agency to being initiating new system.</li> </ul>	March/April 2018

Page 32 to/à Page 43

Withheld pursuant to/removed as

s.13

Page 45 to/à Page 46

Withheld pursuant to/removed as

s.12;s.13

# Ministry of Agriculture BRIEFING NOTE FOR MINISTER FOR INFORMATION FOR MEETING WITH THE MINISTER OF LABOUR AND THE DEPUTY SPEAKER ON MARCH 6, 2018

Ref: 187830 Date: February 19, 2018

Title: Human rights case involving Indo-Canadian Veterinarians in BC

**Issue**: The Honourable Harry Bains, Minister of Labour, and Deputy Speaker Raj Chouhan, have requested a meeting scheduled for March 6, 2018, with the Minister Popham to discuss a human rights case involving Indo-Canadian Veterinarians in BC.

#### Background:

- In 2005, a group of 13 Indo-Canadian veterinarians initiated a complaint with the BC Human Rights Tribunal (Tribunal) against the B.C. Veterinary Medical Association (BCVMA) and its Registrar, Valerie Osborne, alleging discrimination contrary to the BC Human Rights Code.
- In September 2010, the BCVMA was restructured and became the College of Veterinarians of British Columbia (CVBC) under BC's new *Veterinarians Act*.
- The Tribunal complaint alleged two forms of discrimination by BCVMA: first, when it imposed an unreasonably high English language proficiency requirement in order for veterinarians to be licensed; and second, in processing disciplinary complaints and penalties imposed against the complainants.
- In October 2015, the Tribunal found the BCVMA (now CVBC) had engaged in discrimination against the 13 complainants. The Tribunal ordered an end to the discriminatory practices and payment to the complainants of \$2,000 to \$35,000 per complainant (\$219,500 in total) plus interest for injury to dignity, feelings and self-respect.
- In December 2015, CVBC chose to exercise its right to appeal the decision through a Judicial Review.
- Upon receiving notice from the CVBC that they would be appealing the HRT decision, the ministry
  presented a letter of expectation to the CVBC.
- The CVBC outlined the following areas of progress towards meeting the BC Government's expectations:
  - The hiring of a Director of Complaints, Registration and Legal Services to take steps to monitor staff and committee compliance with the Human Rights code and to set up staff, contractor and committee training programs for 2016;
  - o The CVBC has adopted a non-discrimination policy; and,
  - o The CVBC's policy on English language is similar with that of other regulators and in accordance with the provisions of the federal Agreement on Internal Trade.
- In June 2017, CVBC announced that it would not pursue a judicial review of the Tribunal's October decision.

#### Discussion:

• The CVBC posted a public apology as follows on the CVBC website:

In the spirit of moving forward and acknowledging the findings of discrimination made by the Human Rights Tribunal in Brar and others v. BC Veterinary Medical Association and others, the College accepts the findings of discrimination against Indo-Canadian Veterinarians and apologizes to all of the complainants for the loss of dignity, pain and suffering caused by the College's conduct, including Dr. Hakam Bhullar and his family who suffered professional and personal distress by the College's removal of his license in December 2009. The College acknowledges its past mistakes in the standards, inspection and discipline arenas. The College is now working to improve its processes and foster positive, constructive and forward-looking relationships with the complainants and all registrants.

- The Tribunal decision also ordered CVBC to adopt and post an anti-discrimination policy on its website
  and to provide a one-day training program for staff, contractors, volunteers and committee members
  including Council members targeting racial discrimination and accommodating disabilities.
- The CVBC has posted their anti-discrimination policy on their website and the one-day training program was completed in November 2016.
- In May 2017, the former Director of Complaints, Registration and Legal Services was appointed as the New Registrar.
- Many of the council members and other committee members that were named in the Tribunal decision have since been removed from their positions.
- The CVBC has publically apologized to the 13 Indo-Canadian veterinarians that were named in the Tribunal decision.
- In the apology, the CVBC states that it accepts the findings of discrimination against Indo-Canadian veterinarians and apologizes to all of the complainants for the loss of dignity, pain and suffering caused by the CVBC's conduct, including Dr. Hakam Bhullar and his family who suffered professional and personal distress by the CVBC's removal of his license in December 2009.
- The CVBC is aware of a December 2017 complaint to the Tribunal that has been accepted for filing. The CVBC has not yet heard from the Tribunal but has signaled to the Ministry of Agriculture that this could be considered a "potential claim" in the future.

#### Suggested Response:

- The CVBC has publicly accepted responsibility and has taken action to address the human rights claim and put in place an anti-discrimination policy and training in response.
- I have no information about the recent complaint to the Tribunal although the CVBC has made the Ministry aware that there could be a "potential claim" in the future.
- I am interested in hearing your information and if you have concerns, ministry staff will look further into the information.

Conta	ect: Heather Ander	rson, Senior Policy Analyst,	250 356-1687
ED	LH	ADM	DM

Ref: 186717 X-Ref: 186665 Date: September 1, 2017

Issue: Some First Nations requesting Atlantic salmon farms be removed from their traditional territories.

### **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 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 the industry generated 5,000 jobs, paying roughly 30 per cent more than the provincial median. 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. There are 20 fish farm tenures (in the Broughton Archipelago) due to expire in June 2018, including the site at Swanson Island presently occupied by First Nations protesters. Typically the client would apply for a tenure replacement several months in advance of the expiry.

### Roles and Responsibilities:

Fisheries and Oceans Canada (DFO) is the lead for aquaculture management including:

- Proper management and control of aquaculture including licensing, and management of pollution measures including conservation and protection of wild fish and fish habitat;
- Aquatic animal health including disease prevention, detection and control; feed, medication, and biologics;
- Scientific research and monitoring, data collection on industry performance.

Key provincial responsibilities broken down by Ministry are summarized in the table below:

Ministry of Agriculture	<ul> <li>B.C.'s lead for seafood industry development</li> <li>B.C.'s lead for strategic aquaculture policy</li> <li>Aquaculture Industry Specialist on staff</li> <li>Maintains Animal Health Laboratory in Abbotsford</li> </ul>
Ministry of Forests Lands and Natural Resource Operations and Rural Economic Development (FLNR)	<ul> <li>Issue tenures authorizing the use of the land, foreshore and marine areas for finfish and shellfish aquaculture (Land Act)</li> <li>Issue freshwater licences (Water Sustainability Act).</li> <li>Marine Use Planning</li> </ul>
Ministry of Environment and Climate Change Strategy	Issues permits for sewage discharge (Environmental Management Act)     Issue permits for pesticide use (Integrated Pest Management Act)

### First Nations and Crown Land Tenures:

There are mixed perspectives from First Nations related to aquaculture in B.C. Some First Nations are seeking to have salmon farms removed from their traditional territories. In some cases these farms were established in their territories many years ago. This issue has gained profile because of the new government's commitment to marine based aquaculture and to the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

Salmon farms may also operate on sites claimed as traditional territory by more than one First Nation, with differing views on the industry. For the majority of the tenures for finfish aquaculture considered to be in the Broughton Archipelago, the Gwawaenuk Tribe; Dzawada'enuxw First Nation; Kwickwasut'inuwx/Haxwa'mis First Nations have historically been opposed to aquaculture in their territory. The Namgis First Nations has also raised their opposition to open net aquaculture and have received government funding to support the land-based recirculating aquaculture system that is occurring in their territory (Kuterra Project). Some Interior First Nations may also oppose salmon farming because of their concerns on its potential to impact wild salmon spawning upstream in their territories.

Other First Nations have become active participants in the salmon aquaculture sector with 20 economic and social partnership agreements in place between companies and coastal First Nations accounting for approximately 80% of total production in the sector. First Nations who have chosen to actively participate in salmon aquaculture do so in a variety of ways ranging from: employment in hatcheries, farms and processing plants; providing contracted services and local environmental monitoring; to ownership of site tenures or full business ownership.

The Province is legally obligated to consult and (where required) accommodate First Nations on land and resource decisions that could impact their Aboriginal interests. To date, meeting the consultation obligations has not required the consent of First Nations. During First Nations consultation processes, measures have been taken over the years to try to address concerns raised by First Nations. Accommodation measures implemented include:

- certain areas placed under moratorium (i.e. no finfish allowed);
- tenures issued with reduced terms for licences (e.g. Broughton tenures were replaced only for 5 years versus up to 30 years);
- some licences were not replaced or approved in certain locations (capacity may have been relocated to another area of coast);
- · modifying specific tenure boundaries to address localized issues or values;
- economic accommodation (usually provided by client); and
- "zoning" for aquaculture was covered in the marine plans developed jointly with Province/First Nations (MAPP).

Traditional territories of First Nations commonly overlap, often between First Nations with opposing views such that one may be interested in access to economic benefits, and another that will actively oppose marine-based salmon aquaculture due to the potential risk to wild salmon and associated cultural and environmental significance.

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Cohen Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River:

The Commission was established in 2009 to examine the potential causes of the Fraser River sockeye salmon decline. The report includes 75 recommendations regarding the policies, practices and procedures, DFO, eight of which directly or indirectly reference the Province of British Columbia. Although the Commission could not find a "smoking gun" for decline in Fraser River sockeye, the report did recommend that DFO not issue any new licenses for salmon farms or allow increases in existing farm production in the Discovery Islands until at least 2020.

In 2013, the B.C. government accepted the intent of each of the eight Cohen Commission recommendations that directly reference the Province and have implemented them. In 2016, the Minister responsible for DFO issued a progress report on implementation of the Cohen Commission recommendations. The main outstanding issues relate to Canada's Wild Salmon Policy and DFO has decided to undertake consultations on how to address them.

# Research and transparent monitoring to minimize risk to wild salmon:

Fish health monitoring is a joint responsibility of the salmon farm operators, DFO and independent veterinarians. DFO, the Canadian Food Inspection Agency and AGRI also have important regulatory, research and diagnostic roles with respect to managing disease risk. DFO has primary regulatory oversight and is responsible for the aquaculture audit program including sea lice management. B.C. provides salmon health diagnostics services to DFO through AGRI's Animal Health Centre (AHC). It is the only institution in North America with two board-certified veterinary pathologists who work exclusively with fish.

The Strategic Salmon Health Initiative (SSHI), funded by DFO, Pacific Salmon Foundation, and Genome B.C., is conducting large-scale assessments of microbes carried by farmed and wild salmon (sockeye, chinook and coho) and examining their potential for impacting the health and condition of salmon. The Province is also engaged in and monitoring the progress of the SSHI and other related salmon health research as part of the Minister of Agriculture's Advisory Council on Finfish Aquaculture (MAACFA) process.

### Tenure Moratoriums and the "Pause":

The Province has established two moratoriums on expansion of the finfish aquaculture industry. The first was established through a provincial Order in Council under the *Environmental and Land Use Act* in 2008, covering all coastal areas north of Klemtu. The second was implemented in 2013 in response to a recommendation of the Cohen Commission that no new salmon farms be approved in the Discovery Islands area until at least September 30, 2020 pending additional research and completion of a disease risk assessment process.

In 2015, the Province announced a "pause" on approvals for any new salmon aquaculture tenures and restrictions on amendments to existing tenures. The "pause" is in place to allow for an examination to ensure that aquaculture operations are socially and ecologically sustainable and can co-exist with B.C.'s wild fishery resource.

As part of the pause, government committed to:

- Establish MAACFA to provide strategic advice about the future of marine-based salmon aquaculture. The members of MAACFA include representation from the aquaculture industry, academia, non-governmental organizations, First Nations and senior government officials, with a final report with recommendations expected by the end of 2017;
- Examine establishing a protocol relating to use of Aquaculture Stewardship Certification; and,
- Examine feasibility of improved microbe protection out of the Strategic Salmon Health Research Initiative.

During the pause, while there will be no net new salmon aquaculture operations. The Province will:

- review for decision, an application to amend an existing tenure where required to improve safety, operational management or efficiency;
- will review for decision, an application to relocate a tenure to a more suitable location (e.g., to address safety issues); or,
- · an application for replacement of a tenure.

Policy also allows for certain changes to improvements (i.e. nets and accommodations) to occur within a tenure area without advance approval but notification to FLNR is required. These changes may include:

- relocation or realignment of improvements within the tenure area;
- a change of 30% or less of the Intensive Area within the salmon tenure boundary; and,
- modification to improvements required to support best management practices, husbandry and to respond to stock availability in a manner that is consistent with all federal authorizations.

#### New Government Commitments:

The new government's commitments relate to marine based aquaculture are as follows:

- 1) Ensure that the salmon farming industry does not endanger wild salmon by:
  - a. implementing the recommendations of the Cohen Commission;
  - b. keeping farm sites out of important salmon migration routes; and,
  - c. supporting research and transparent monitoring to minimize the risk of disease transfer from captive to wild fish.
- 2) Provide incentives to help the aquaculture industry transition to closed containment where possible.

B.C. is working with DFO on how to meaningfully move forward on outstanding Cohen Commission recommendations. This will likely be focused on investments to improve the health of the wild salmon population as part of DFO's wild salmon policy.

<sup>&</sup>lt;sup>1</sup> Intensive area means the area of Crown land used for activities and related improvements directly associated with the production of finfish. The intensive area will include net cages, netting, float camps, net storage, docks and mort sheds as well as a 30-meter buffer around these structures.

B.C. has provided funding previously to support closed containment research. B.C. is in discussions with DFO about a potential new Clean Tech Fund for Fisheries and Aquaculture that could support further work in this area.

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ED	ADM JM	DM

### Key Messages on Finfish Aquaculture

- B.C. is closely watching the recent escape of Atlantic salmon in the State of Washington.
  - o DFO has been monitoring the fish farms and publicly reporting escapes for years
  - BC had 22 Atlantic salmon escape in the last year and only 10 total escapes over the previous four years.
- DFO has an audit program that regularly monitors the aquaculture industry in BC
  - o The program audits and publicly reports on conditions of licence including:
    - ✓ Escapes
    - ✓ Biomass on site
    - ✓ Fish health (including sea lice)
    - ✓ Benthic monitoring
    - ✓ Unusual Mortality events
    - ✓ Veterinary drug and pest control products
    - ✓ Marine mammal interaction
    - ✓ Net testing (maintenance , net strength testing)
- B.C. provides salmon health diagnostics services to DFO through Ministry of Agriculture's Animal Health Centre.
  - o It is the only institution in North America with two board-certified veterinary pathologists who work exclusively with fish.
- June 2015, the B.C. government announced it was going to examine the salmon aquaculture
  application and approval framework to ensure the operations are socially and ecologically
  sustainable, and could coexist with B.C.'s wild fishery resources. The announcement also
  clarified that while it was being undertaken, the Province will not consider any further
  approvals for new salmon aquaculture tenures.
- The review included the commitment to form Minister of Agriculture's Advisory Council on Finfish Aquaculture with members from the aquaculture industry, non-governmental organizations, First Nations and provincial government employees.
- B.C. is also looking at the use of Aquaculture Stewardship Council Certification for B.C. salmon farms, as well as the Strategic Salmon Health Research Initiative.
- The Council has met and discussed a range of matters related to salmon aquaculture and is anticipated will 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.
- The B.C. government is open to hearing from First Nations and stakeholders with their concerns and ideas about aquaculture operations.
- The Federal Department of Fisheries and Oceans is responsible for the conservation and management of wild fisheries and has oversight of aquaculture operations in Canada, and as such, the B.C. government works in collaboration with them in all areas involving their jurisdiction.

Re: 187112 Date: October 24, 2017

Issue: Information on Provincial moratoria on finfish aquaculture tenures.

**Background**: The Province of B.C. has implemented two moratoria on new finfish aquaculture tenures in the Pacific:

#### 1. North Coast Moratorium (Appendices 1, 2 and 3)

On March 27, 2008, the B.C. Government announced a moratorium on finfish aquaculture licenses and tenures north of 52 degrees 50 (Klemtu area). This announcement was justified as measure to minimize interaction risk to wild salmon populations and as part of the development of a collaborative approach to aquaculture with First Nations. When Fisheries and Oceans Canada assumed responsibility for finfish aquaculture licensing as a result of the Hinkson decision, they continued to honour the provincial moratorium.

### 2. Discovery Islands Moratorium (Appendices 4 and 5)

On March 22, 2013, the B.C. Government announced its response to the Cohen Commission and acceptance of the recommendations pursuant to Provincial jurisdiction. In response to a specific recommendation, the Province announced a moratorium on issuing any new net-pen salmon farm tenures in the Discovery Islands area until September 30<sup>th</sup>, 2020.

# 3. Province-wide "pause"

In addition, the Province announced a 'pause' on further approvals for new marine salmon aquaculture tenures while the following three actions are undertaken:

- Government will strike a standing Minister of Agriculture's Advisory Council on Finfish Aquaculture that will include members from the aquaculture industry, non-governmental organizations and First Nations, as well as the Ministry of Agriculture and the Ministry of Forests, Lands and Natural Resource Operations.
- Examine establishing a protocol for receiving advice from the Aquaculture Stewardship Council in regard to tenures for new aquaculture sites.
- Examine the feasibility of improved microbe detection at aquaculture sites arising from the work being undertaken by Genome BC in tandem with the other scientific evidence already available to the Province.

A clarification was later issued that finfish tenure amendments (without production increases) for improvements to safety, operational management or efficiency, or for a more suitable location were permitted under the 'pause'.

# **Appendices:**

- Appendix 1 OIC 174 North Coast Moratorium Media Release
- **Appendix 2** OIC 174
- Appendix 3 OIC 174 Map
- Appendix 4 Discovery Islands Moratorium News Release
- Appendix 5 BC Response to Cohen Commission Backgrounder

Contact:	Mike Turner,	Corporate	Governance, Policy	and Legislation,	250 356-1704
ED		ADM _		DM	_

**Appendix 1** – OIC 174 North Coast Moratorium Media Release



# NEWS RELEASE

For Immediate Release 2008AL0011-000421 March 27, 2008

Ministry of Agriculture and Lands

#### FINFISH AQUACULTURE SUSPENDED IN THE NORTH COAST AREA

VICTORIA – The Province is suspending the issuance of licenses and tenures for finfish aquaculture in North Coast tidal waters north of Aristazabal Island while it examines the feasibility of adopting a new approach to aquaculture management in collaboration with First Nations, Agriculture and Lands Minister Pat Bell announced today.

"Currently, there are no operating finfish farms on the North Coast and the government is implementing this suspension to allow time to explore new management options for aquaculture practices," said Bell. "We have huge potential if we work together with the First Nations Leadership Council in dealing with finfish aquaculture. These discussions will allow us to work collaboratively to create a comprehensive and forward-reaching provincial aquaculture plan that protects the health of wild salmon."

The collaborative approach has worked well, allowing the Province to move forward with historic land-use agreements on the Central and North Coasts, where ecosystem-based management frameworks are now in place to ensure the ecological integrity of the land base and improve human well-being in these communities.

"This announcement is a positive step towards the sustainability and survival of our coastal ecosystems," said Elmer Derrick of the First Nations Leadership Council Aquaculture Working Group. "However, we must ensure that the government-to-government solutions to aquaculture ensure that First Nations communities seeking economic opportunities, through aquaculture, are adequately accommodated and supported to establish other economic ventures and strong coastal communities."

The order to suspend licensing and tenures falls under the Environment and Land Use Act, and will be effective immediately. The suspension does not affect opportunities for shellfish farming, which is of significant interest to First Nations on the North Coast. The order to suspend the issuance of licenses and tenures applies to finfish aquaculture in tidal waters, not shellfish farms or finfish farms such as trout farms in freshwater.

The suspension begins near the top end of Aristazabal Island which is 150 km south of the mouth of the Skeena River. Currently there are three applications for finfish aquaculture licenses in this area. Crown land tenures for these sites were previously issued and two aquaculture licenses were approved, but have since lapsed. The sites are not active at this time. A map detailing the area is available at: www.al.gov.bc.ca/fisheries/cabinet/OIC central northcoast map.pdf

Appendix 2 - OIC 174

### PROVINCE OF BRITISH COLUMBIA

ORDER OF THE LIEUTENANT GOVERNOR IN COUNCIL

Order in Council No.

174

, Approved and Ordered

MAR 27 2008

Lieutenant Governor

Executive Council Chambers, Victoria

On the recommendation of the undersigned and of the Environment and Land Use Committee, the Lieutenant Governor, by and with the advice and consent of the Executive Council, makes the following order:

Finfish Aquaculture Order

#### Definition

1 In this order, "tinfish" means fish of the classes Agnatha, Chondrichthyes or Osteichthyes grown by a person.

#### **Prohibition**

- 2 A minister, ministry and agent of the Crown must not do the following:
  - (a) issue a licence under section 14 of the *Fisheries Act* permitting finfish aquaculture in or on the tidal waters of the Province of British Columbia that are north of 52 degrees, 50 minutes latitude:
  - (b) dispose of land for the purpose of finfish aquaculture in or on the tidal waters of the Province of British Columbia that are north of 52 degrees, 50 minutes latitude.

Minister of Agriculture and Lands

(This part is for administrative purposes on part in the

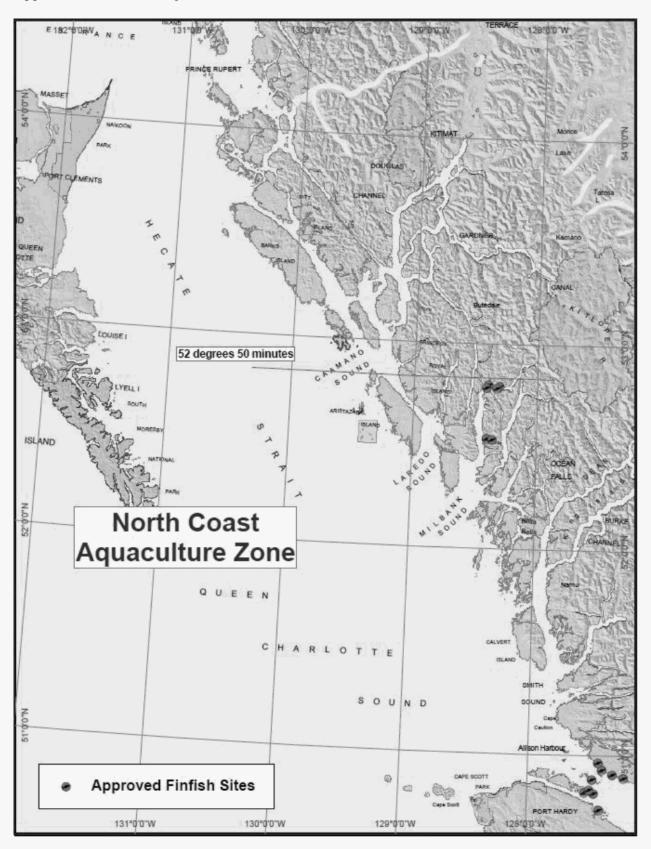
Presiding Member of the Executive Count

Authority under which Order is made:

Act and section:- Environment and Land Use Act, R.S.B.C. 1996, c. 117, s. 7 Other (specify):-

November 7, 2007 0/1120/2007/4

Appendix 3 – OIC 174 Map



Appendix 4 - BC Cohen Commission Response and Discovery Islands Moratorium News Release



NEWS RELEASE For Immediate Release 2013AGRI0018-000570 March 22, 2013

Ministry of Agriculture

# **B.C. responds to Cohen Commission recommendations**

VICTORIA – The B.C. government has accepted the intent of each of the eight Cohen Commission recommendations that directly reference the Province.

In addition, the B.C. government's response notes the Province has no intention of issuing any new tenure agreements for net-pen salmon farms in the Discovery Islands until Sept. 30, 2020.

The B.C. government accepted, or accepted the intent of recommendations regarding various aspects of riparian area management and compliance and enforcement, the Water Act, marine habitat spill response, agriculture and forestry pesticide record keeping, and that the monitoring of industrial and wastewater management includes consideration for sockeye salmon.

Each of the recommendations and the B.C. government's response is included in the following backgrounder.

On Oct. 31, 2012, the final report of the Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River was made publically available. The report includes 75 recommendations regarding the policies, practices and procedures of the federal government's Fisheries and Oceans Canada, eight of which directly or indirectly reference the Province of British Columbia.

The Pacific salmon was recently declared the provincial fish emblem to recognize the high ecological, cultural and economic significance of the Pacific salmon to British Columbians.

### Quote:

### Norm Letnick, Minister of Agriculture -

"These responses support the B.C. government's commitment to the ecologically responsible management of B.C. fisheries, including an environmentally and economically sustainable aquaculture industry that benefits all British Columbians."

## Learn More:

• The website of the Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River: <a href="http://www.cohencommission.ca">http://www.cohencommission.ca</a>

A backgrounder follows.

Contact: Dave Townsend

Government Communications and Public Engagement

Ministry of Agriculture

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Connect with the Province of B.C. at: www.gov.bc.ca/connect

**Appendix 5** – BC Response to Cohen Commission Backgrounder

#### BACKGROUNDER

For Immediate Release 2013AGRI0018-000570 March 22, 2013 Ministry of Agriculture

#### Recommendation with indirect reference to British

#### Columbia Recommendation 14

Beginning immediately and continuing until at least September 30, 2020, Fisheries and Oceans Canada should ensure that; the maximum duration of any licence issued under the Pacific Aquaculture Regulations for a net-pen salmon farm in the Discovery Islands (fish health sub- zone 3-2) does not exceed one year; Fisheries and Oceans Canada does not issue new licences for net-pen salmon farms in the Discovery Islands (fish health sub-zone 3-2); and Fisheries and Oceans Canada does not permit increases in production at any existing net-pen salmon farm in the Discovery Islands (fish health sub-zone 3-2).

## **BC Response:** Accept intent of the Recommendation.

The Province of British Columbia has no intention of issuing any further or expanded tenures for net-pen salmon farms in the Discovery Islands until at least September 30, 2020. The Province of British Columbia will continue to consider applications to amend the boundaries of existing net-pen salmon farms for purposes other than for increasing production. The Province will work with Fisheries and Oceans Canada, and with industry and First Nations to implement the intent of this recommendation.

### Recommendations with direct references to British

#### Columbia Recommendation 43

Fisheries and Oceans Canada should encourage the Province of British Columbia to resolve differences of interpretation on the application of section 9 of the provincial Water Act and the provincial Riparian Areas Regulation to ensure that there are no gaps in coverage.

## **BC Response:** Accept intent of the Recommendation.

The Riparian Areas Regulation definition of 'High Water Mark' is not always coincident with the definition of 'Natural Boundary' in the Water Act and Land Act. Although the Province does not believe that there is a physical gap in coverage of the Water Act and the Riparian Areas Regulation, the Province is examining this concern during a review of the legislation.

### **Recommendation 44**

Fisheries and Oceans Canada should encourage the Province of British Columbia to continue to monitor compliance with the provincial Riparian Areas Regulation; to conduct effectiveness monitoring of projects completed in compliance with the Riparian Areas Regulation; and to consider Fisheries and Oceans Canada's input into the impact of Riparian Areas Regulation setback variances on fish and fish habitat.

## **BC Response:** Accept intent of the Recommendation.

The Province is currently conducting compliance monitoring of projects. The inter- governmental cooperation agreement between the Province, the Union of British Columbia Municipalities, and Fisheries and Oceans Canada creates obligations for Fisheries and Oceans Canada in compliance and effectiveness monitoring. The Province expects that Fisheries and Oceans Canada will continue to meet their obligations in support of provincial initiatives. Any recommendations made by Fisheries and Oceans Canada with respect to setbacks need to be consistent with the agreement.

#### Recommendation 45

Fisheries and Oceans Canada should work with the Province of British Columbia to achieve the Riparian Areas Regulation target of 90 per cent compliance with 90 per cent confidence levels.

# **BC Response:** Accept Recommendation as written.

The compliance target or benchmark agreed upon by the Province and Fisheries and Oceans Canada is to achieve 90 per cent compliance with 90 per cent confidence. As above, the intergovernmental cooperation agreement signed by Fisheries and Oceans Canada creates obligations for Fisheries and Oceans Canada in compliance and effectiveness monitoring.

#### **Recommendation 46**

Fisheries and Oceans Canada should encourage the Province of British Columbia to amend the Riparian Areas Regulation: to require provincial approval of setback variances; and to require local governments to enforce compliance with the assessment reports on which development proposals are approved.

# **BC Response:** Accept intent of the Recommendation.

Variance approval is an obligation that Fisheries and Oceans Canada has agreed to in the intergovernmental cooperation agreement. The Province has included mechanisms in the various Riparian Areas Regulation implementation tools for Fisheries and Oceans to meet these obligations. Where a variance results in an impact to fish habitat only the Minister of Fisheries and Oceans or a regulation under the Fisheries Act (Canada) can authorize that impact. The Riparian Areas Regulation currently requires local government use their tools to protect riparian fish habitat and to accomplish this local government can enforce their bylaws.

#### Recommendation 47

Fisheries and Oceans Canada should encourage the Province of British Columbia to complete modernization of the Water Act, which would include: regulation of groundwater extraction in a manner that addresses the needs of Fraser River sockeye; increased reporting and monitoring of water use; and allocation of sufficient resources to complete the modernization process.

# **BC Response:** Accept intent of the Recommendation.

The Province is developing a new Water Sustainability Act that will update and replace the current Water Act. Introduction of the new Act is planned for 2014.

The inclusion of groundwater regulation and requirements for monitoring and reporting of water are already important commitments in British Columbia's Living Water Smart plan and are key policies of the proposed new Water Sustainability Act. An analysis of implementation options and delivery costs associated with the proposed legislation is currently underway.

#### Recommendation 52

Fisheries and Oceans Canada should identify an individual with regional responsibility to act as a liaison with the Canadian Coast Guard, Environment Canada, and the Province of British Columbia on marine habitat spill response.

**BC Response:** Accept Recommendation as written. The Province agrees this would improve decision making in spill response.

#### **Recommendation 54**

Fisheries and Oceans Canada should encourage the Province of British Columbia to require users of pesticides in forestry and agriculture to record, and report annually to the Province, the areas where pesticides were applied and the amounts used; and to develop and maintain a pesticide-use database that includes information on location, volume/concentration, and timing of use, and make that information publicly available.

# **BC Response:** Accept intent of the Recommendation.

Health Canada sets use requirements for all pesticides on the labels for protection of people and the environment. Proper use of pesticides is the best method to prevent impacts to the environment. The Province requires authorizations for pesticide use on public land, specific industrial uses (including forestry), pesticide application services, and the sale of pesticide. The Province also administers the certification system for individual pesticide applicators.

Authorization holders are required to report annually on the total amount of each pesticide used or sold. The locations of the pesticides used must be recorded and maintained for three years. Any pesticide service business that applies pesticides for agriculture operations must be licensed and would be required to report total pesticides used.

#### Recommendation 55

Fisheries and Oceans Canada and Environment Canada should co-operatively ensure that environmental quality monitoring and environmental effects monitoring related to pulp and paper, metal mining, and municipal wastewater discharges include consideration of Fraser River sockeye salmon, and the two federal departments should work with the Province of British Columbia and with regional and municipal governments to that end; work with British Columbia municipalities on a public education campaign.

#### **BC Response:** Accept intent of the Recommendation.

The Province and the Federal Government will need to work co-operatively to avoid regulatory and administrative duplication and to secure resourcing for monitoring. The Province supports public reporting and education with respect to source control, environmental effects monitoring, toxics and other areas. The Province supports a joint effort in source control to limit the discharge of emerging contaminants to the wastewater systems.

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Ministry of Agriculture

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Connect with the Province of B.C. at: www.gov.bc.ca/connect

Re: 187112 Date: October 31, 2017

Issue: Information on Provincial moratoria on finfish aquaculture tenures.

**Background**: The Province of B.C. has implemented two formal moratoria and one policy-based 'pause' on new finfish aquaculture tenures in the Pacific:

#### 1. North Coast Moratorium.

On March 27, 2008, the B.C. Government announced a moratorium on finfish aquaculture licenses and tenures north of 52 degrees 50 (Klemtu area). The moratorium was established through a provincial Order in Council under the *Environmental and Land Use Act*. This measure was the result of the Province acting on a specific recommendation from the Special Committee on Sustainable Aquaculture's Final Report. The Committee was appointed by the Legislative Assembly to make recommendations with respect to sustainable aquaculture in BC. They were tasked to consider the following:

- The economic and environmental impacts of the aquaculture industry in BC;
- The economic impact of aquaculture on BC's coast and isolated communities;
- Sustainable options for aquaculture in BC that balance economic goals with environmental imperatives;
- BC's regulatory regime as it compares to other jurisdictions; and,
- Solicit and consider written and oral submissions from interested stakeholders.

On May 16, 2007, the Committee tabled their report which featured 52 recommendations, including the moratorium. When Fisheries and Oceans Canada assumed responsibility for finfish aquaculture licensing as a result of the Hinkson Decision (2010), they opted to continue to honour this provincial moratorium (See Appendix 1 – North Coast Map).

#### 2. Discovery Islands Moratorium.

In November, 2009 the Government of Canada established a federal Commission of Inquiry to investigate the decline of Fraser River sockeye stocks and appointed the Honourable Bruce Cohen, Justice of the Supreme Court of British Columbia as sole Commissioner. In October 2012, the Commission released its final report with 75 recommendations. The report found no single cause for Fraser River sockeye declines, although climate change and the cumulative impacts of human activities were found to be significant. (See Appendix 2 - Background, BC Response to Cohen Commission).

The report was not critical of B.C. provincial resource management. However, eight of the recommendations directly or indirectly referenced the Province and one more involved provincial responsibilities related to salmon aquaculture. On March 22, 2013, the B.C. Government announced its response to the Cohen Commission by accepting the intent of the recommendations pursuant to Provincial jurisdiction. In response to a specific recommendation, the Province announced a moratorium on issuing any new net-pen salmon farm tenures in the Discovery Islands area until September 30<sup>th</sup>, 2020, pending further research.

### 3. Province-wide "pause".

In July 2015, BC implemented an additional policy to 'pause' the approval of new marine-based salmon aquaculture tenures coast-wide. This 'pause' puts on hold B.C.'s potential for growth in the aquaculture sector pending a review of the tenures approval process. The 'pause' is in place to allow for an examination of the rules and restrictions that guide the application and approval process to ensure that aquaculture operations are socially and ecologically sustainable and can coexist with B.C.'s wild fishery resource.

The announcement of the 'pause' expanded the existing Discovery Islands moratorium coast-wide while the following three actions are undertaken:

- Government will strike a standing Minister of Agriculture's Advisory Council on Finfish Aquaculture (MAACFA) that will include members from the aquaculture industry, nongovernmental organizations and First Nations, as well as the Ministry of Agriculture and the Ministry of Forests, Lands and Natural Resource Operations.
- Examine establishing a protocol for receiving advice from the Aquaculture Stewardship Council in regard to tenures for new aquaculture sites.
- Examine the feasibility of improved microbe detection at aquaculture sites arising from the work being undertaken by Genome BC in tandem with the other scientific evidence already available to the Province.

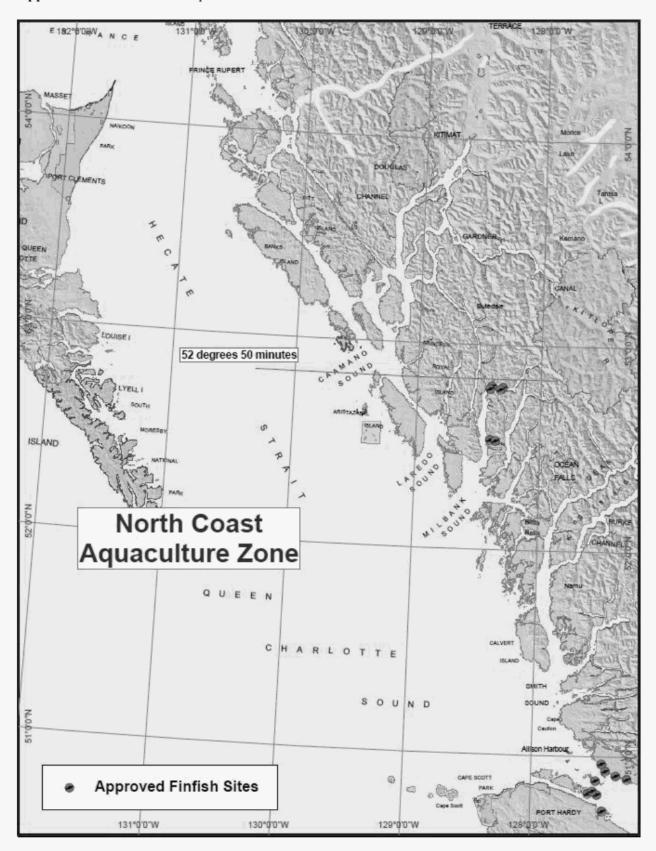
A clarification was later issued that finfish tenure amendments (without production increases) for improvements to safety, operational management or efficiency, or for a more suitable location were permitted under the 'pause'.

# **Appendices:**

- **Appendix 1** North Coast Map
- Appendix 2 Background, BC Response to Cohen Commission

Contac	et: Mike Turner, O	Corporate	e Governance, Polic	y and Legislation, 250 356-1704
ED _	LH	ADM	JM	DM

Appendix 1 – North Coast Map



Appendix 2 – Background, BC Response to Cohen Commission

#### BACKGROUNDER

For Immediate Release 2013AGRI0018-000570 March 22, 2013 Ministry of Agriculture

### Recommendation with indirect reference to British

### Columbia Recommendation 14

Beginning immediately and continuing until at least September 30, 2020, Fisheries and Oceans Canada should ensure that; the maximum duration of any licence issued under the Pacific Aquaculture Regulations for a net-pen salmon farm in the Discovery Islands (fish health sub- zone 3-2) does not exceed one year; Fisheries and Oceans Canada does not issue new licences for net-pen salmon farms in the Discovery Islands (fish health sub-zone 3-2); and Fisheries and Oceans Canada does not permit increases in production at any existing net-pen salmon farm in the Discovery Islands (fish health sub-zone 3-2).

### **BC Response:** Accept intent of the Recommendation.

The Province of British Columbia has no intention of issuing any further or expanded tenures for net-pen salmon farms in the Discovery Islands until at least September 30, 2020. The Province of British Columbia will continue to consider applications to amend the boundaries of existing net-pen salmon farms for purposes other than for increasing production. The Province will work with Fisheries and Oceans Canada, and with industry and First Nations to implement the intent of this recommendation.

### Recommendations with direct references to British

#### Columbia Recommendation 43

Fisheries and Oceans Canada should encourage the Province of British Columbia to resolve differences of interpretation on the application of section 9 of the provincial Water Act and the provincial Riparian Areas Regulation to ensure that there are no gaps in coverage.

#### **BC Response:** Accept intent of the Recommendation.

The Riparian Areas Regulation definition of 'High Water Mark' is not always coincident with the definition of 'Natural Boundary' in the Water Act and Land Act. Although the Province does not believe that there is a physical gap in coverage of the Water Act and the Riparian Areas Regulation, the Province is examining this concern during a review of the legislation.

#### **Recommendation 44**

Fisheries and Oceans Canada should encourage the Province of British Columbia to continue to monitor compliance with the provincial Riparian Areas Regulation; to conduct effectiveness monitoring of projects completed in compliance with the Riparian Areas Regulation; and to consider Fisheries and Oceans Canada's input into the impact of Riparian Areas Regulation setback variances on fish and fish habitat.

# **BC Response:** Accept intent of the Recommendation.

The Province is currently conducting compliance monitoring of projects. The inter-governmental

cooperation agreement between the Province, the Union of British Columbia Municipalities, and Fisheries and Oceans Canada creates obligations for Fisheries and Oceans Canada in compliance and effectiveness monitoring. The Province expects that Fisheries and Oceans Canada will continue to meet their obligations in support of provincial initiatives. Any recommendations made by Fisheries and Oceans Canada with respect to setbacks need to be consistent with the agreement.

#### Recommendation 45

Fisheries and Oceans Canada should work with the Province of British Columbia to achieve the Riparian Areas Regulation target of 90 per cent compliance with 90 per cent confidence levels.

### BC Response: Accept Recommendation as written.

The compliance target or benchmark agreed upon by the Province and Fisheries and Oceans Canada is to achieve 90 per cent compliance with 90 per cent confidence. As above, the intergovernmental cooperation agreement signed by Fisheries and Oceans Canada creates obligations for Fisheries and Oceans Canada in compliance and effectiveness monitoring.

#### **Recommendation 46**

Fisheries and Oceans Canada should encourage the Province of British Columbia to amend the Riparian Areas Regulation: to require provincial approval of setback variances; and to require local governments to enforce compliance with the assessment reports on which development proposals are approved.

### **BC Response:** Accept intent of the Recommendation.

Variance approval is an obligation that Fisheries and Oceans Canada has agreed to in the intergovernmental cooperation agreement. The Province has included mechanisms in the various Riparian Areas Regulation implementation tools for Fisheries and Oceans to meet these obligations. Where a variance results in an impact to fish habitat only the Minister of Fisheries and Oceans or a regulation under the Fisheries Act (Canada) can authorize that impact. The Riparian Areas Regulation currently requires local government use their tools to protect riparian fish habitat and to accomplish this local government can enforce their bylaws.

#### **Recommendation 47**

Fisheries and Oceans Canada should encourage the Province of British Columbia to complete modernization of the Water Act, which would include: regulation of groundwater extraction in a manner that addresses the needs of Fraser River sockeye; increased reporting and monitoring of water use; and allocation of sufficient resources to complete the modernization process.

### **BC Response:** Accept intent of the Recommendation.

The Province is developing a new Water Sustainability Act that will update and replace the current Water Act. Introduction of the new Act is planned for 2014.

The inclusion of groundwater regulation and requirements for monitoring and reporting of water are already important commitments in British Columbia's Living Water Smart plan and are key policies of the proposed new Water Sustainability Act. An analysis of implementation options and delivery costs associated with the proposed legislation is currently underway.

### Recommendation 52

Fisheries and Oceans Canada should identify an individual with regional responsibility to act as a liaison with the Canadian Coast Guard, Environment Canada, and the Province of British Columbia on marine habitat spill response.

**BC Response:** Accept Recommendation as written. The Province agrees this would improve decision making in spill response.

#### Recommendation 54

Fisheries and Oceans Canada should encourage the Province of British Columbia to require users of pesticides in forestry and agriculture to record, and report annually to the Province, the areas where pesticides were applied and the amounts used; and to develop and maintain a pesticide-use database that includes information on location, volume/concentration, and timing of use, and make that information publicly available.

### **BC Response:** Accept intent of the Recommendation.

Health Canada sets use requirements for all pesticides on the labels for protection of people and the environment. Proper use of pesticides is the best method to prevent impacts to the environment. The Province requires authorizations for pesticide use on public land, specific industrial uses (including forestry), pesticide application services, and the sale of pesticide. The Province also administers the certification system for individual pesticide applicators.

Authorization holders are required to report annually on the total amount of each pesticide used or sold. The locations of the pesticides used must be recorded and maintained for three years. Any pesticide service business that applies pesticides for agriculture operations must be licensed and would be required to report total pesticides used.

### Recommendation 55

Fisheries and Oceans Canada and Environment Canada should co-operatively ensure that environmental quality monitoring and environmental effects monitoring related to pulp and paper, metal mining, and municipal wastewater discharges include consideration of Fraser River sockeye salmon, and the two federal departments should work with the Province of British Columbia and with regional and municipal governments to that end; work with British Columbia municipalities on a public education campaign.

### **BC Response:** Accept intent of the Recommendation.

The Province and the Federal Government will need to work co-operatively to avoid regulatory and administrative duplication and to secure resourcing for monitoring. The Province supports public reporting and education with respect to source control, environmental effects monitoring, toxics and other areas. The Province supports a joint effort in source control to limit the discharge of emerging contaminants to the wastewater systems.

Ref: 187113 Date: October 24, 2017

Issue: Cohen Commission and implementation of platform commitments with respect to salmon farming.

**Background**: The 2017 BC NDP Platform contains two commitments with respect to wild salmon and aquaculture:

- 1) Ensure that the salmon farming industry does not endanger wild salmon by implementing the recommendations of the Cohen Commission, keeping farm sites out of important salmon migration routes, and supporting research and transparent monitoring to minimize the risk of disease transfer from captive to wild fish; and
- 2) Provide incentives to help the aquaculture industry transition to closed containment where possible.

The mandate of the Cohen Commission was to:

- Consider the policies and practices of Fisheries and Oceans Canada (DFO) with respect to the (Fraser River) sockeye salmon fishery
- Investigate and make independent findings of fact regarding to:
  - o the causes for the decline of Fraser River sockeye;
  - o the current state of Fraser River sockeye stocks and the long term projections for those stocks; and
  - o develop recommendations for improving for improving the future sustainability of the sockeye salmon fishery.

Justice Cohen made 75 recommendations in the final report, released October 2012, under the broad themes of Wild Salmon Policy (WSP), Fisheries Management, Habitat, Aquaculture, and Science. While the mandate was specific to Fraser River sockeye, many of the recommendations have broader applicability to all salmon in BC.

On March 22, 2013, the BC Government announced its response to the Cohen Commission and acceptance of the recommendations pursuant to Provincial jurisdiction (see Appendix A). Out of the 75 recommendations, one recommendation had an indirect reference to B.C., with eight others that referenced B.C. In response to recommendation 14, that was directed at both DFO and the Province, the Province announced a moratorium on issuing any new net-pen salmon farm tenures in the Discovery Islands area until September 30<sup>th</sup>, 2020. In addition to this moratorium, the Province announced a 'pause' on further approvals for new marine salmon aquaculture tenures. A clarification was later issued that finfish tenure amendments (without production increases) for improvements to safety, operational management or efficiency, or for a more suitable location were permitted under the 'pause'.

Nine of the Commission recommendations related to salmon aquaculture. DFO responded formally on August 9, 2016 (see Appendix B). Despite finding no evidence of impact on Fraser River sockeye from aquaculture, the Commissioner recommended that DFO not issue any new licenses for salmon farms or allow increases in existing farm production in the Discovery Islands until 2020, unless sufficient evidence can be assembled to verify that the disease risk to Fraser River sockeye is minimal.

#### Discussion:

s.13

# BRIEFING NOTE FOR M

Ministry of Agriculture
BRIEFING NOTE FOR MINISTER FOR INFORMATION

#### **Summary:**

s.13

- The Province has addressed the Cohen Commission recommendations that were directed at it.
- Implementing mandate commitments with respect to salmon farm sites and salmon migration corridors should be informed by ongoing research and risk assessments currently underway.
- The province has considerable expertise and capacity to assist in fish health diagnosis and can use this in assisting the research in salmon aquaculture risk assessment.
- A decision to transition to closed containment should be based on scientific evidence that it is required to protect wild salmon health.
- Transitioning salmon growout sites (i.e. marine based net pens) to closed containment will only be successful if it is technically and economically feasible.
- Significant incentives are likely required to transition the industry to closed containment and commensurate funding programs or other incentives are required.
- An opportunity exists to help DFO shape the Wild Salmon Policy Implementation Plan and provincial agencies could further engage.

Contact: Ba	arron Carswell, Corpo	orate Governance, Policy a	and Legislation, 250 356-1678
ED <u>LH</u>	ADM _	JM DM	WS

**CONFIDENTIAL** 

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**Appendix A** – BC Response to Cohen Commission Backgrounder

#### BACKGROUNDER

For Immediate Release 2013AGRI0018-000570 March 22, 2013 Ministry of Agriculture

#### Recommendation with indirect reference to British Columbia

#### **Recommendation 14**

Beginning immediately and continuing until at least September 30, 2020, Fisheries and Oceans Canada should ensure that; the maximum duration of any licence issued under the Pacific Aquaculture Regulations for a net-pen salmon farm in the Discovery Islands (fish health subzone 3-2) does not exceed one year; Fisheries and Oceans Canada does not issue new licences for net-pen salmon farms in the Discovery Islands (fish health sub-zone 3-2); and Fisheries and Oceans Canada does not permit increases in production at any existing net-pen salmon farm in the Discovery Islands (fish health sub-zone 3-2).

# BC Response: Accept intent of the Recommendation.

The Province of British Columbia has no intention of issuing any further or expanded tenures for net-pen salmon farms in the Discovery Islands until at least September 30, 2020. The Province of British Columbia will continue to consider applications to amend the boundaries of existing net-pen salmon farms for purposes other than for increasing production. The Province will work with Fisheries and Oceans Canada, and with industry and First Nations to implement the intent of this recommendation.

### Recommendations with direct references to British Columbia

#### **Recommendation 43**

Fisheries and Oceans Canada should encourage the Province of British Columbia to resolve differences of interpretation on the application of section 9 of the provincial Water Act and the provincial Riparian Areas Regulation to ensure that there are no gaps in coverage.

### **BC Response:** Accept intent of the Recommendation.

The Riparian Areas Regulation definition of 'High Water Mark' is not always coincident with the definition of 'Natural Boundary' in the Water Act and Land Act. Although the Province does not believe that there is a physical gap in coverage of the Water Act and the Riparian Areas Regulation, the Province is examining this concern during a review of the legislation.

#### Recommendation 44

Fisheries and Oceans Canada should encourage the Province of British Columbia to continue to monitor compliance with the provincial Riparian Areas Regulation; to conduct effectiveness monitoring of projects completed in compliance with the Riparian Areas Regulation; and to consider Fisheries and Oceans Canada's input into the impact of Riparian Areas Regulation setback variances on fish and fish habitat.

### **BC Response:** Accept intent of the Recommendation.

The Province is currently conducting compliance monitoring of projects. The inter- governmental cooperation agreement between the Province, the Union of British Columbia Municipalities, and Fisheries and Oceans Canada creates obligations for Fisheries and Oceans Canada in compliance and effectiveness monitoring. The Province expects that Fisheries and Oceans Canada will continue to meet their obligations in support of provincial initiatives. Any recommendations made by Fisheries and Oceans Canada with respect to setbacks need to be consistent with the agreement.

#### Recommendation 45

Fisheries and Oceans Canada should work with the Province of British Columbia to achieve the Riparian Areas Regulation target of 90 per cent compliance with 90 per cent confidence levels.

### BC Response: Accept Recommendation as written.

The compliance target or benchmark agreed upon by the Province and Fisheries and Oceans Canada is to achieve 90 per cent compliance with 90 per cent confidence. As above, the inter- governmental cooperation agreement signed by Fisheries and Oceans Canada creates obligations for Fisheries and Oceans Canada in compliance and effectiveness monitoring.

#### **Recommendation 46**

Fisheries and Oceans Canada should encourage the Province of British Columbia to amend the Riparian Areas Regulation: to require provincial approval of setback variances; and to require local governments to enforce compliance with the assessment reports on which development proposals are approved.

# **BC Response:** Accept intent of the Recommendation.

Variance approval is an obligation that Fisheries and Oceans Canada has agreed to in the intergovernmental cooperation agreement. The Province has included mechanisms in the various Riparian Areas Regulation implementation tools for Fisheries and Oceans to meet these obligations. Where a variance results in an impact to fish habitat only the Minister of Fisheries and Oceans or a regulation under the Fisheries Act (Canada) can authorize that impact. The Riparian Areas Regulation currently requires local government use their tools to protect riparian fish habitat and to accomplish this local government can enforce their bylaws.

#### **Recommendation 47**

Fisheries and Oceans Canada should encourage the Province of British Columbia to complete modernization of the Water Act, which would include: regulation of groundwater extraction in a manner that addresses the needs of Fraser River sockeye; increased reporting and monitoring of water use; and allocation of sufficient resources to complete the modernization process.

### **BC Response:** Accept intent of the Recommendation.

The Province is developing a new Water Sustainability Act that will update and replace the current Water Act. Introduction of the new Act is planned for 2014.

The inclusion of groundwater regulation and requirements for monitoring and reporting of water are already important commitments in British Columbia's Living Water Smart plan and are key policies of the proposed new Water Sustainability Act. An analysis of implementation options and delivery costs

-

associated with the proposed legislation is currently underway.

#### Recommendation 52

Fisheries and Oceans Canada should identify an individual with regional responsibility to act as a liaison with the Canadian Coast Guard, Environment Canada, and the Province of British Columbia on marine habitat spill response.

**BC Response:** Accept Recommendation as written. The Province agrees this would improve decision making in spill response.

#### Recommendation 54

Fisheries and Oceans Canada should encourage the Province of British Columbia to require users of pesticides in forestry and agriculture to record, and report annually to the Province, the areas where pesticides were applied and the amounts used; and to develop and maintain a pesticide-use database that includes information on location, volume/concentration, and timing of use, and make that information publicly available.

### **BC Response:** Accept intent of the Recommendation.

Health Canada sets use requirements for all pesticides on the labels for protection of people and the environment. Proper use of pesticides is the best method to prevent impacts to the environment. The Province requires authorizations for pesticide use on public land, specific industrial uses (including forestry), pesticide application services, and the sale of pesticide. The Province also administers the certification system for individual pesticide applicators.

Authorization holders are required to report annually on the total amount of each pesticide used or sold. The locations of the pesticides used must be recorded and maintained for three years. Any pesticide service business that applies pesticides for agriculture operations must be licensed and would be required to report total pesticides used.

#### Recommendation 55

Fisheries and Oceans Canada and Environment Canada should co-operatively ensure that environmental quality monitoring and environmental effects monitoring related to pulp and paper, metal mining, and municipal wastewater discharges include consideration of Fraser River sockeye salmon, and the two federal departments should work with the Province of British Columbia and with regional and municipal governments to that end; work with British Columbia municipalities on a public education campaign.

# **BC Response:** Accept intent of the Recommendation.

The Province and the Federal Government will need to work co-operatively to avoid regulatory and administrative duplication and to secure resourcing for monitoring. The Province supports public reporting and education with respect to source control, environmental effects monitoring, toxics and other areas. The Province supports a joint effort in source control to limit the discharge of emerging contaminants to the wastewater systems.

**Dave Townsend** 

Contact: Government Communications and Public Engagement

Ministry of Agriculture

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Connect with the Province of B.C. at: www.gov.bc.ca/connect

Appendix B. DFO Response to Commission recommendation related to Salmon Aquaculture

Nine of the Commission recommendations relate to salmon aquaculture and DFO's specific responses are listed below.

Recommendation 13 - The Department of Fisheries and Oceans should give non-government scientific researchers timely access to primary fish health data collected through DFO's routine monitoring programs, including data that relate to farmed or wild salmon.

**DFO response:** This recommendation has been implemented. DFO routinely posts updated marine finfish aquaculture fish health data to its website. The salmon escapement and productivity data sets were made available on the Open Data portal in 2015: (http://open.canada.ca/data/en/dataset/c48669a3-045b-400d-b730-48aafe8c5ee6).

Requests for further information regarding wild fish data can be considered subject to the provisions and exemptions outlined in the Access to Information and Privacy Act.

Recommendation 14 - Beginning immediately and continuing until at least September 30, 2020, the Department of Fisheries and Oceans should ensure that:

- the maximum duration of any licence issued under the Pacific Aquaculture Regulations for a net-pen salmon farm in the Discovery Islands (fish health sub-zone 3-2) does not exceed one year;
- DFO does not issue new licenses for net-pen salmon farms in the Discovery Islands (fish health sub-zone 3-2); and
- DFO does not permit increases in production at any existing net-pen salmon farm in the Discovery Islands (fish health sub-zone 3-2).

**DFO response:** This recommendation has been implemented. DFO has limited salmon farming operations in the Discovery Island area until September 30, 2020, and multi-year licences will not be available for this area. During this time, additional scientific research will be conducted and a disease risk assessment process will be completed. In the interim, licence holders are required to submit fish health data to DFO, which is then posted on the DFO website.

Recommendation 15 = The Department of Fisheries and Oceans should explicitly consider proximity to migrating Fraser River sockeye when siting salmon farms.

**DFO response:** This recommendation has been implemented. Siting of aquaculture operations is a shared and harmonized process in BC, requiring provincial crown tenure, a federal navigable waters permit, and a federal aquaculture licence. Aquaculture applications are submitted through a single-portal, where the Government of BC reviews siting related to granting leases for provincial crown lands, Transport Canada reviews siting related to navigable waters, and DFO considers siting relating to potential impacts to the aquatic environment from an aquaculture licence. More specifically, DFO's review process for siting salmon farms considers potential impacts to fish, fish habitat and the environment; potential impacts to existing fisheries; and fish health and wild-

farmed interactions, which specifically includes consideration of the proximity to wild salmon migration routes.

Recommendation 16 — After seeking comment from First Nations and stakeholders, and after responding to challenge by scientific peer review, the Department of Fisheries and Oceans should, by March 31, 2013, and every five years thereafter, revise salmon farm siting criteria to reflect new scientific information about salmon farms situated on or near Fraser River sockeye salmon migration routes as well as the cumulative effects of these farms on these sockeye.

**DFO response:** This recommendation has been implemented. Siting of aquaculture operations in BC is a shared and harmonized approach between the federal and provincial governments. DFO completed a review of Siting Guidelines for Marine Finfish Aquaculture in BC in 2014/15, which also included consultation with First Nations and stakeholders. Revised Guidelines have been developed based on this review process and have been presented in draft form to industry, First Nations and environmental non-governmental organizations. The final Guidelines have now been approved. This review was informed by the latest science advice, which included consideration of potential impacts of aquaculture facilities on wild salmon. The review also included a commitment to examine and revise the Siting Guidelines every five years or less to incorporate new science and information as it becomes available.

Recommendation 17 - The Department of Fisheries and Oceans should apply revised siting criteria to all licensed salmon farm sites. Farms that no longer comply with siting criteria should be promptly removed or relocated to sites that comply with current siting criteria.

**DFO response:** Existing farms are managed through conditions of licence. These conditions of licence, among other things, require companies to manage relevant issues outlined in the Siting Guidelines. In circumstances where a farm does not adequately meet the conditions of licence, work is undertaken to examine mitigation options, which may include relocation. As such, this recommendation is considered to have been implemented, albeit in an alternative way.

Recommendation 18 - If at any time between now and September 30, 2020, the Minister of Fisheries and Oceans determines that net-pen salmon farms in the Discovery Islands (fish health sub-zone 3-2) pose more than a minimal risk of serious harm to the health of migrating Fraser River sockeye salmon, he or she should promptly order that those salmon farms cease operations.

**DFO response:** This recommendation has been implemented. Scientific research is being conducted and a disease risk assessment process is underway and will be completed by 2020. If scientific research indicates that net-pen salmon farms in the Discovery Islands pose more than a minimal risk of serious harm to the health of migrating Fraser River sockeye salmon, salmon farms in the Discovery Islands will be required to cease operations.

The results of the risk assessment may indicate that further research is required to support Ministerial decisions. Additional funding may be required depending on what further research is needed.

Recommendation 19 - On September 30, 2020, the Minister of Fisheries and Oceans should prohibit netpen salmon farming in the Discovery Islands (fish health sub-zone 3-2) unless he or she is satisfied that such farms pose at most a minimal risk of serious harm to the health of migrating Fraser River sockeye salmon. The Minister's decision should summarize the information relied on and include detailed reasons. The decision should be published on the Department of Fisheries and Oceans' website.

**DFO response:** This recommendation has not been implemented as the timeline on this recommendation is September 2020; however, scientific research is being conducted to address the question raised. See also response to Recommendation 18.

Recommendation 20 – To inform the decision under Recommendation 19, the Minister and the Department of Fisheries and Oceans should take the following steps:

- conduct the research and analyses recommended in Recommendation 68 and publish the results of this research;
- assess any relationships between salmon farming variables compiled in the fish health database and Fraser River sockeye health or productivity.

**DFO response:** This recommendation has been implemented and new science funding has been provided to augment work in this area. DFO has ongoing research programs that are examining interactions of wild salmon (primarily sockeye, coho and chinook) with salmon farms in the Discovery Island Area. Migration routes, residency time, and the condition and health of juvenile salmon are being assessed. This work is being done in collaboration with external groups such as the Pacific Salmon Foundation and British Columbia Salmon Farmers Association. **DFO will continue to develop a more formal assessment of disease risks, particularly novel and endemic diseases working with the Canadian Food Inspection Agency and domestic and international experts.** 

Results from this work have been presented at public and scientific meetings, and data reports from the first two years have been published. Formal peer-reviewed publications are planned. Samples from research programs have also been provided to the Strategic Salmon Health Initiative.

Results from these programs will continue to inform management of industry, as well as provide critical information to support Fisheries and Oceans Canada formal fish disease risk assessment.

Recommendation 67 – The fish health research priorities of the Department of Fisheries and Oceans should reflect its responsibility for the conservation of wild fish. To that end, DFO's science managers should encourage innovation and new research into novel diseases and other conditions affecting wild fish, beyond the interests of specific "clients" such as the Canadian Food Inspection Agency or aquaculture management.

#### **DFO** response:

While some work has been done that aligns with this recommendation, it is viewed as not implemented because additional resources would be required to continue and expand this work.

The fish health research priorities of DFO reflect DFO's responsibility for conservation of wild fish. DFO's current fish health research priorities for BC focus on the study of pathogens and parasites present on salmon farms and their effects on wild salmonids, especially sockeye salmon.

DFO also supports the Strategic Salmon Health Initiative (Fisheries and Oceans Canada, Pacific Salmon Foundation, and Genome BC funded) which is conducting large scale assessments of microbes carried by farmed and wild salmon (sockeye, chinook and coho) and examining their potential for impacting the health and condition of salmon.

DFO actively encourages the use of new research tools to diagnose and study disease and other conditions affecting wild fish. For example, the Strategic Salmon Health Initiative (SSHI) has developed and validated a microfluidics-based microbe monitoring platform that allows for very cost effective and rapid screening of samples for 45 microbes. DFO has and continues to fund or co-fund research programs that use other types of advanced genomic techniques to examine host-pathogen/parasite interactions, salmon condition and performance and microbe genetic diversity. These programs are conducted in collaboration with national and international experts from universities and other research organizations.

CLIFF 187123 Date: October 26, 2017

**Issue**: BC has committed to a process to address concerns of First Nations regarding salmon farm tenures in the Broughton Archipelago.

### Background:

First Nations have indicated their intention to remain protesting salmon farm sites in the Broughton Archipelago until the Province of BC cancels the associated tenures. These tenures come up for renewal in June 2018. First Nations leaders have officially requested the Province initiate a government-to-government discussion to address this issue. This discourse has led to the need for a targeted approach to managing salmon farm tenures in the Broughton Area. This process has been developed and requires Ministers' decisions on how best to proceed.

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# **Appendix 1: Broughton Process Timeline**

Phase	Timelines	Key Milestone	Key Tasks
Phase 1	Immediate: October 26-Nov 3, 2017	Confirm support for a strategic Broughton Archipelago process.	<ol> <li>Confirm key participants (BC, DFO, FN).</li> <li>Define scope, approach and principles.</li> <li>Approve short list of potential facilitators.</li> <li>Confirm funding source.</li> </ol>
	Nov 6 – 17	Schedule initial meeting with FN and DFO	<ol> <li>Confirm scope and timelines.</li> <li>Endorse process and strategy.</li> <li>Approve ToR.</li> <li>Appoint a facilitator.</li> </ol>
	Nov 20 – Dec 31, 2017	Ongoing roundtable discussions	<ul><li>9. Endorse recommendations acceptable to all tripartite committee members.</li><li>10. Finalize recommendations for discussion with industry.</li></ul>
Phase 2	Jan 1 – Feb 29, 2018	Schedule initial and ongoing meetings with industry.	<ul> <li>11. Consult on strategic solutions.</li> <li>12. Consider industry concerns.</li> <li>13. Finalize a Broughton strategy for future implementation.</li> <li>14. Close out tripartite committee and Broughton process.</li> </ul>
	March 2018 onwards	Public release of Broughton Strategy	<ul><li>15. Work with communications for public release of Broughton Strategy.</li><li>16. Implementation of Broughton Strategy.</li></ul>

### **Appendix 2: Terms of Reference**

Terms of Reference

### Background:

The purpose of this document is to outline the terms to undertake a government led G2G2G (BC, Canada, First Nations) discussion process with the intent to resolve concerns with open-net pen Atlantic salmon aquaculture in the Broughton Archipelago. The process will be guided by the government mandate commitments to protect important wild salmon migration routes, continue to encourage innovation within the industry, reflect UNDRIP principles and also provide clarity on the future state of aquaculture tenures in the Broughton area.

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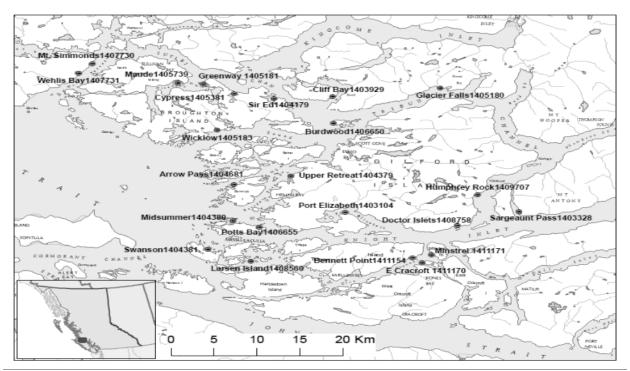


Figure 1 – Salmon farms in the Broughton Archipelago area.

#### **Term**

A final solution is expected by the end of February, 2018. After which, the G2G2G committee should be dissolved.

#### Expenses

[TBD – need to identify who is covering costs.]

### Secretariat Support

- James Mack, Assistant Deputy Minister, Ministry of Agriculture (AGRI), and Executive lead for the BC Seafood Secretariat
- o Craig Sutherland, Assistant Deputy Minister, FLNR
- o David Travia, Director of the BC Seafood Secretariat (AGRI)
- Officials from AGRI, FLNR and MIRR as required.

The Province will provide meeting space, teleconferencing access and logistical organization.

### Meeting schedule

Meetings will be convened at least biweekly beginning from the approval of these Terms to the end for February, 2018.

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DECISION NOTE FOR MINISTER FOR INFORMATION			
Appendix 4: Communications Strategy			
[To come from GCPE]			

# Ministry of Agriculture INFORMATION NOTE FOR PREMIER ALERT BAY MEETING

Ref: Date: October 6, 2017

Issue: Information regarding Closed Containment Aquaculture

### Background:

#### **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 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 the industry generated 5,000 jobs, paying roughly 30 per cent more than the provincial median. 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.

#### Discussion:

#### 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 BC).

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

For salmon, there is only one commercial scale facility, Kuterra, 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 and 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 Kuttera project was \$12.7 million. 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 BC there is one other 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 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 this constraint included locating farms as close as possible to key markets to reduce transport costs and through economies of scale.

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The most notable project to attempt this is the Atlantic Sapphire project in Florida with a projected production capacity of 90,000 MT and cost of \$817M over the next nine years.

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 and 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.

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			BAT MEETING
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