

The Dangerous Route Home:

another call for an end to
open net-pen salmon farming



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The short:

There is sufficient and growing evidence that open-net-pen salmon farming of Atlantic salmon poses a more than minimal risk to wild migrating Pacific salmon. Cohen Commission Recommendations 18 & 19 to prohibit salmon farming in the Discovery Islands should be invoked and a rapid transition to a complete prohibition in all coastal BC waters should follow.

Cohen Commission and Recommendation 19:

The Fraser river sockeye salmon have undergone a 3-fold decline over the past 20 years. This decline triggered the famous federal inquiry, the Cohen Commission. At the forefront of the Commission was the issue of open net-pen salmon farming in the migratory waters of Pacific salmonids. **The important question is whether the transfer of sea lice or viral disease from largely non-native Atlantic salmon in open net-pens caused or contributed to the decline in the wild Fraser river Pacific salmon?** The Commission made some 75 recommendations. Recommendation 19 addresses open net salmon farms in an important migratory route (Discovery Islands) and includes a rapidly approaching deadline:

“ Recommendation 19: On September 30, 2020, the minister of fisheries and oceans should prohibit net-pen salmon farming in the Discovery Islands 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. “

What is required to invoke Recommendation 19? To show that the salmon farms of the Discovery Islands *could* pose more than minimal risk to wild Pacific Salmon.



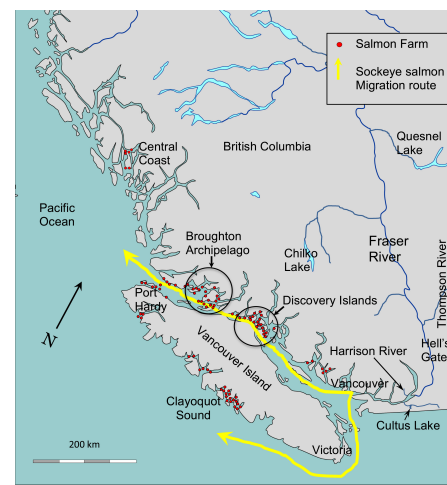
Demonstrating risk:

There are 3 major lines of evidence that demonstrate the risk that open net-pen salmon farms pose to wild Pacific salmon populations.

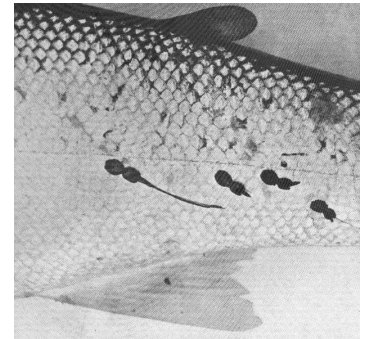
1. Harrison river subpopulation: The exception to the decline in Fraser river sockeye is the Harrison river subpopulation – it is steadily increasing. What distinguishes Harrison river salmon is a distinct migratory route that takes them south of Vancouver Island and isolates them from concentrations of salmon farms (Fig 1). So – salmon interacting with salmon farms are declining and those that aren't are increasing.

2. Sea lice: Salmon farms are a breeding ground for sea lice (Fig 2). Sea lice infection rates are a magnitude higher for wild salmon interacting with salmon farms in the Discovery Islands than those that aren't. Infection can be lethal, but also has non-lethal effects like a reduced ability to evade predators.

3. Viruses: There are 4 notable viruses. All the viruses cause significant health problems in salmon that can lead directly or indirectly to lower survival.



1. Map of migration routes. Reprinted from [1].



2. Sea lice. PC: Freshwater and Marine Image Bank

Virus	Present in farmed salmon?	Present in wild salmon?	Link between farms and wild salmon?
<i>Infectious haematopoietic necrosis virus (IHNV)</i>	Yes	Yes	Yes
<i>Salmon leukemia virus (SLV)</i>	No ¹	Some evidence	No
<i>Piscine reovirus (PRV)</i>	Yes	Yes	Yes
<i>Infectious salmon anemia virus (ISAV)</i>	Some evidence	Some evidence	Some evidence

1. SLV was present historically when Chinook salmon were the dominant farmed salmon in coastal BC waters.

Recommendations:

There is an already sufficient and growing body of evidence that shows the enormous risk of open-pen salmon. This evidence has been met with an inadequate federal response from the Department of Fisheries and Oceans. Immediate action is required. Inaction will not only threaten wild Pacific salmon populations but demonstrate a purposeful, negligent interpretation of available scientific evidence to sustain the farmed salmon industry.

1. Invoke Cohen Commission Recommendation 19 – a prohibition of open net-pen salmon farming in the Discovery Islands on September 30, 2020.
2. Invoke Cohen Commission Recommendation 18 – an immediate order to cease operation of open net-pen salmon farms in the Discovery Islands.
3. Initiate the phasing out and eventual ban of open net-pen salmon farming on the entirety of the BC coast.
4. Initiate research and a transition to salmon aquaculture that is isolated from wild salmon populations.
5. Invest in and conduct transparent and rigorous research to confirm the identity of the dominant viruses affecting wild Pacific salmon populations.

References

[1] Morton, A., & Routledge, R. (2016). Risk and precaution: Salmon farming. *Marine Policy*, 74, 205-212.
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