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Honourable George Heyman, BC Ministry of Environment and Climate Change Strategy

Honourable Doug Donaldson, BC Ministry of Forests, Lands, Natural Resource Operations & Rural Development

Honourable Lana Popham, BC Minister of Agriculture

The Honourable Dominic LeBlanc, Minister of Fisheries and Oceans Canada

The Honourable Catherine McKenna, Minister of Environment and Climate Change

Dear Ministers,

SUBJECT: Two Bridge Crossings at Herring and Carey Islands, Chilliwack, Fraser River

It has come to our attention that applications are underway to construct bridges to two large islands on the Fraser River near Chilliwack/Agassiz, BC. We believe these bridges pose a long-term threat to critical fish habitat in this portion of the Heart of the Fraser due to their facilitation of the conversion of these islands into intense agricultural lands.

The ancillary effects these activities have already caused via land clearing, and will cause in the future, are substantial and ecologically damaging to this critical-ecosystem component of the lower Fraser River. Immense *Serious Harm* has already occurred with the extensive clearing of wetland and riparian areas on these islands and it is expected that there will be long-term disruption of adjacent chum and white sturgeon spawning habitats, as well as negative impacts to juvenile salmonid rearing areas, should these bridges be built and the locations developed into intensively farmed land.

Watershed Watch Salmon Society alerts and educates the public, political and agency decision-makers of threats to salmon and their habitats in British Columbia, while promoting solutions. We are deeply concerned about the loss of salmon habitat in the lower Fraser River, and our many supporters and allies share this concern. Our concerns are exemplified through our work to restore waterways impacted by dike infrastructure in the lower Fraser making them fish-friendly. Herring and Carey Islands are part of this once-great aquatic ecosystem that will be lost if these bridges are built.

There is ecological and economic value in maintaining the integrity of the Heart of the Fraser as a significant ecological unit between Hope and Mission. Enormous damage to ecological function has already occurred in this part of the watershed, elevating the importance of protecting these islands and other intact habitats in the Heart of the Fraser from further damage.

The conversion of Herrling and Carey Islands to intensive farming, combined with the removal of riparian vegetation that has already occurred, and the inevitable diking and the need for heavy bank riprap that will affect habitat regeneration, will certainly degrade these islands as keystone fisheries and ecological features. Attached is a submission on the subject from Dr. Mike Church, a prominent fluvial geomorphologist from the University of BC Geography Department. In it he states,

“Riprap inhibits the lateral movement of the channel, and it also largely isolates the channel from drop-in organic matter that is an important carbon source for the aquatic ecosystem...”

The bridge development will make such damaging activities a virtual certainty. According to Dr. Marvin Rosenau of BCIT,

“the back-channel and wetland areas of these two islands, during freshet, comprise highly productive salmon rearing habitat. The much smaller groundwater flows in the winter in the back channels comprise key chum salmon spawning habitats.”

Again, the proposed works would add to the long list of habitat destruction that already threatens our local salmon populations.

It is important that all relevant information be considered in the processing of the applications for these bridges.

We strongly recommend the applications be subject to the:

- BC *Water Sustainability Act* Section 11 “changes in and about a stream”
- Fisheries and Oceans Canada *Fisheries Act* Section 35 “Serious Harm to fish”
- *Navigable Waters Protection Act*

We request that you put a pause on approving any authorizations for these works until a full agency and public review of these applications has been completed. This must include comprehensive assessments of actual and potential damages to habitat under the appropriate legislation and authorities.

For the fish,



Lina Azeez, Campaign Manager
Watershed Watch Salmon Society

Dr. Mike Church addendum

Comment re. proposed bridge construction at the downstream end of Herrling Island

My name is Michael Church. I am a professor emeritus of geography in the University of British Columbia. My research expertise is fluvial geomorphology – the study of rivers. I have investigated lower Fraser River for more than forty years. I was the principal author of the 2001 report¹ that established the gravel budget of lower Fraser River and formed the basis for a subsequent federal-provincial interim agreement on gravel management in the river. In 2010 I provided Emergency Management BC with advice on sediment management² in the gravel reach.

I understand that it is proposed to construct a private bridge across the Herrling side channel at the lower end of Herrling Island to facilitate access to a proposed agricultural land development on the island. Over the last decade gravel moving within the reach has accumulated on Tranmer Bar, opposite the lower end of Herrling Island. The consequent lateral growth of Tranmer Bar has forced the main channel toward the left (Herrling) bank so that extensive erosion has occurred there. This process is likely to continue until the lower end of the island is entirely eroded away, along with the bridge landing on the Herrling side. This is an entirely natural process in the river related to movement and redistribution of gravel within the reach. It is, moreover, the process by which aquatic habitat is serially renewed and the rich productivity in the reach in salmon, in other fishes and other wildlife is maintained.

Should the bridge be constructed, its owners will undoubtedly demand that the banks of the river, both on the main channel side and in the Herrling side channel be heavily riprapped to prevent the result forecast above. This equally destroys river habitat by preventing the lateral migration of channels that effects habitat renewal and would be highly undesirable within any policy that seeks to maintain the integrity and productivity of the river environment. Riprap inhibits the lateral movement of the channel, and it also largely isolates the channel from drop-in organic matter that is an important carbon source for the aquatic ecosystem (as does tree clearance on the banks, which will happen to facilitate the riprap placement).

In more general terms, gravel transporting rivers naturally undergo lateral shifting of their channels in the manner currently under way at lower Herrling Island as a natural part of their function in transporting and redistributing gravel along the channel. The ecosystem of the river is adapted to this process and relies on it for the maintenance of habitat quality (hence productivity). Consequently, the “channel zone” in all such rivers consists of a wider extent than the width of the current channel. In Fraser River, the width of the current channel is about 525 m; I have estimated that the desirable channel zone width in the gravel reach is 1500 m, on average, and certainly should not be less than 1200 m. The islands in the channel are part of the channel zone – they are only temporary, most having a lifetime of only a century or so³. They should not be subject to development of any kind. The islands

¹ Church, M., Ham, D.G. and Weatherly, H. 2001. *Gravel Management in Lower Fraser River*. Report for the City of Chilliwack, 18 October (revised 12 December): xi+110pp (available at www.geog.ubc.ca/fraserriver/reports).

² Church, M. 2010. *Sediment management in Lower Fraser River: criteria for a sustainable long-term plan for the gravel-bed reach*. Report for Emergency Management BC, Ministry of Public Safety and the Solicitor-General. March 30: 38pp.

³ Church, M. and Rice, S.P. 2009. Form and growth of bars in a wandering gravel-bed river. *Earth Surface Processes and Landforms* 34: 1422-1432. doi: 10.1002/esp.1831.

should be reserved as part of the channel and left entirely in a natural state. It would not be unreasonable to extend the ecological reserve status of Wellington Island to all the islands and bars in the gravel reach, or otherwise to place them in a conservational state.

Respectfully presented

Michael Church, FRSC, D.Sc., P.Geo.(BC)

Michael Church
