

## **Referee Report for hess-2015-356**

Recent climatic, cryospheric, and hydrological changes over the interior of western Canada: a synthesis and review

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MS Type: Review article

Iteration: Major Revision

### **General Comments**

The revised manuscript is a substantial improvement over the original submission. Although the paper remains on the long side, I appreciate that the breadth of material precludes a shorter paper. I thank the authors for the additional synthesis (written as section 9.2), which I feel offers a logical bookend to the review material. Nevertheless, I offer one suggestion. Although the authors stress the point in the abstract that despite the generally robust changes in temperature, permafrost and snow cover/persistence, integrated streamflow change is variable (a function of complex processes and interplay). The paper would be that much more impactful if this point was stressed in the main text as well - perhaps as a lead-in to Section 9.2.

### **Detailed Comments**

Other technical points are as follows (page and line numbers refer to the tracked-changes version of the revised manuscript):

Page 5, Line 24: Is this a presumption, or an undisputed fact?

Page 6, Line 13: The use of "intensity" is ambiguous - are cold spells getting warmer or colder?

Page 11, Line 24-27: This is a very awkward sentence - should be two sentences.

Page 17, Lines 13-15: Awkward sentence

Page 19, Line 35-36: The meaning of "... observations at larger scales are directly reactivation of subsurface flow paths." is unclear.

Page 19, Line 38: What is it about thermokarsts that are changing? Increased frequency?