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The Cryosphere Discussions

Interactive comment on "Mass balance, runoff and surges of the Bering Glacier, Alaska" *by* W. Tangborn

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Tangborn review

General Comments Tangborn is to be congratulated for developing a model that relates parameters of accumulation, ablation, runoff, and elevation using regional weather stations. Within the tolerance of the models accuracy, this technique opens the door for collating otherwise unavailable information in a manner useful for general assessment of climate change. One point that deserves further consideration has to do with the generalization that assumes all runoff is derived from ablation at lower elevations.

Throughout the manuscript, Tangborn makes reference to runoff in a conventional sense, first in the Abstract where increased runoff is related to higher ablation rate

from large volume of transported ice during a surge. Yet, it should be emphasized that during each surge there have been highly significant water loss through outburst floods (jokulhlaups), the source of which remains debatable because some certainly must have arrived at lower elevations from upglacier through englacial and subglacial conduit flow and stored beneath the ice. Therefore, runoff in the form of a jokulhlaup discharged abruptly, as it has, cannot be attributed solely to ablation at lower elevations.

Specific Comments THIS HAS HAPPENED FAR TOO OFTEN IN OTHER PAPERS IN THE PAST TO BE OVERLOOKED AGAIN, HERE. Reference to previously published information is the gold standard in all published material. We all must rely on information made available by others when summarizing our own work in manuscripts submitted for publication. Wendell has done the right thing in Section 7, last paragraph by citing Molnia and Post 2010 when summarizing activity at Bering Glacier in 1994. However, the information attributed to Molnia and Post regarding the restarting of rapid ice movement following the 1994 outburst was not original to Molnia and Post. This information came from Fleisher, et al. in several publications leading up to the Fleisher et al. 2010 chapter in the same GSA Special Paper 462 that also includes the Molnia and Post chapter. The lack of respect for proper citation does not lie with Tangborn. He followed proper protocol. Nor is Post at fault because it was Molnia that drafted and submitted the Molnia and Post paper without the benefit of Post's full review. I am aware of many others whose rights to intellectual property have been violated in a similar manner, and by the same person.

So, how to correct this situation in Tangborns manuscript? I suggest that Tangborn substitute (Fleisher, et al., 2010) for (Molnia and Post, 2010) in the sentence that reads, "However, rapid ice movement restarted and the surge continued for throughout 1995", and included Fleisher, et al., 2010 in the references cited list as Fleisher, P. J., and 5 others. 2010, The 1993-1995 surge and foreland modification, Bering Glacier, .Alaska. Geological Society of America Special Papers 2010; 462; 193-216.

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Technical Corrections Abstract; first sentence Use of abbreviation PTAA should be defined, as shuld all others throughout the manuscript

p. 3; 1. Inroduction, last sentence of 1st paragraph – add reference (personal correspondence, ‘Austin Post, 199X)

p.7; 4. Balance versus Elevation typo line 3, “files” should read “fires”

last paragraph of 7. Bering Surges, Snow Accumulation and Runoff, second sentence from end, eliminate the word “for”.

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