

## ***Interactive comment on “Influence of North Pacific Decadal Variability on the Western Canadian Arctic over the past 700 years” by François Lapointe et al.***

### **Anonymous Referee #1**

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This is an interesting study that describes a 700-year annually-laminated varve record of past precipitation from sediment in Mould Bay in the western Canadian Arctic. It should be published with some revision.

General Comments: 1. I would like to have seen more discussion of dating accuracy in the main text, particularly given the discussion of sizeable errors of 18, 28 years in lags with the paleoclimatic comparisons. Also on how well the varves reflect lower frequency climatic information. 2. Perhaps some discussion of whether the PDO is the most significant influence to discuss here, rather than the Arctic Oscillation. 3. The tree-ring reconstructions of the PDO vary in part because of the different geographical representation of the sites used in each case. Another PDO reconstruction based

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on tree rings is that of Biondi. As a result I believe that they are best interpreted as reflections of the PDO at their given study sites. 4. Are there perhaps other varve/paleo records in the vicinity of the varve site that might be more appropriate for comparison? 5. Good to note the issue of seasonality – trees reflect conditions during different seasons than the varves..also that the dating is more precise. 6. Some (mostly light) editing of English would benefit the manuscript.

Minor points: Abstract: References ok in abstract? Line 9, reword to note that negatively correlated with instrumental for past century, recons over past centuries to 700 years.. P. 3 line 7 ENSO references by Rob Allan, Hadley Centre relevant here p. 3 line 20 show varve site on map. How far from Mould Bay? p. 4 line 16 Mantua, 1997 p. 5 first paragraph: good to discuss errors in dating a bit here in main text.. p. 6 line 2: MSLP not mslp p. 6 line 22: inference not clear re erosive bed and how this relates to first part of sentence p. 6 line 26: what are the loadings of the three recons in PC1? p. 7 line 1 18 year lag: this seems like a rather large offset. 7 line 10: ditto 28 year lag..

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