Biogeosciences Discuss., 12, C2360–C2361, 2015
www.biogeosciences-discuss.net/12/C2360/2015/

Biogeosciences
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Interactive comment on "The role of watershed characteristics, permafrost thaw, and wildfire on dissolved organic carbon biodegradability and water chemistry in Arctic headwater streams" *by* J. R. Larouche et al.

Anonymous Referee #2

Received and published: 22 May 2015

This manuscript reports on a very interesting and well-executed study of the impacts of fire and permafrost disturbance on DOC concentrations and quality (aromaticity and lability) across different landscape types and watershed scales.

Although the data set is limited somewhat by differences in the frequency of the sampling across the various sites, and the low numbers of samples in some cases; the analysis of the data is sound, and the interpretations are appropriate for the data set. The authors thoroughly address the impacts the study design and sample numbers have on the interpretation and significance of the data. (Note that the limitations are

understandable, and almost entirely unavoidable, given the logistics involved in carrying out a study involving so many dimensions and scales of investigation in an arctic setting). Hence, the findings and conclusions drawn are meaningful and make significant contribution towards advancing knowledge of the response of DOM to these types of disturbance across a range of watershed scales and landscape types. The findings highlight the spatial heterogeneity and temporal complexity of the response of carbon dynamics to disturbance in permafrost landscapes.

I have some suggestions for minor corrections and edits in the attached pdf.

Please also note the supplement to this comment:
http://www.biogeosciences-discuss.net/12/C2360/2015/bgd-12-C2360-2015-supplement.pdf

Interactive comment on Biogeosciences Discuss., 12, 4021, 2015.