

Interactive comment on “Soil carbon, available nutrients, and iron and aluminium crystallinity vary between boreal closed-canopy forests and open lichen woodlands” by Carole Bastianelli et al.

Anonymous Referee #2

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General comments: The authors investigated the impact of an ecosystem shift in boreal forests from closed- canopy moss forests to open lichen woodlands on soil carbon and nutrients contents as well as Fe and Al crystallinity in soil profiles down to 80 cm deep. The study was well planned and properly conducted. The data is clearly presented and the discussion is very well structured. The writing is very fluent and logical. The reader never has a feeling of being lost or confused despite the large amount of parameters determined. All in all the manuscript was a very enjoyable read and I recommend the manuscript for publication without changes except for a few typos and omissions listed below.

(Personal note: I prefer consecutive line numbering because it is less cumbersome to

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refer to specific lines in a review as one does not need to include the page number as well.)

Specific comments: None

Technical comments: Abstract line 13: “..that determines the of vegetation stucture...” – there’s a word missing (probably “type of vegetation structure”) Materials and Methods pg 5, line 1: I stumbled over this sentence at first as “annual sum” made me automatically assume “annual mean”, which of course didn’t work with the 1186.4 days. I assume this is the sum of GDD over the whole 1981-2010 period? Maybe the sentence could benefit from a slight rephrasing/clarification. pg 5, line 19: If I understood your site description correctly there should be three EU per given forest type not six. pg 7, line 9: I suggest to add “(SRO)” behind “short-range order” in order to make the abbreviation explanation easier to find for readers who don’t read the manuscript in the “correct” order (i.e. looking at figures and results first etc.)

Results & Discussion pg 12, line 2: “find” instead of “found”

Figures Figures 2 to 4: Complete the figure captions for each figure and do not refer to the legend of figure 1. Depending on type setting of the manuscript later on the figures might end up on different pages, which would then force readers to flip pages back and forth.

Tables Table 1: “Eleva-tion” instead of “Eleva-Tion” move “(%)” behind soil texture to sand, silt and clay in order to be consistent with the preceeding columns (% moss . . .)

Table 2: add units (horizon thickness, CEC, etc.) Table 3: define the meaning of the bold values Table S1: add units

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Y 6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)? Y 7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution? Y 8. Does the title clearly reflect the contents of the paper? Y 9. Does the abstract provide a concise and complete summary? Y 10. Is the overall presentation well structured and clear? Y 11. Is the language fluent and precise? Y 12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used? Y 13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? N 14. Are the number and quality of references appropriate? Y 15. Is the amount and quality of supplementary material appropriate? Y

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