

## ***Interactive comment on “Effect of grassland cutting frequency on soil carbon storage – A case study on public lawns in three Swedish cities” by C. Poeplau et al.***

### **Anonymous Referee #1**

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The article titled: Effect of grassland cutting frequency on soil carbon storage- A case study on public lawns in three Swedish cities has essential prerequisite to be published in SOIL. In addition, this article displays the necessity to research the different sustainable management practices in grassland in relation with C and N stocks. Since, the most of grassland studies have been assessed in financial term but sometimes the functions of soil like C and N storage had been forgotten. In addition, Poeplau et al. include public areas like experimental sites demonstrating the originality and functionality of this study. Nowadays, is important consider too the urban public areas from the different countries because they have environmental properties which are contributing in the soil C and N storage. Although the part of material and methods, the authors

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considered in the line 172: “. . .basic assumption was that the underlying pedology and initial soil carbon stocks were similar...” I think would be necessary at least do a mention about the soil types in every study site because is essential when you work with soil. On the other hand, I believe that in the line 210-211 the correlation between SOC stock and clay content is down. Is possible that the different studied site has different clay mineralogy?. In a recent study from Han et al., 2015 showed that in the most of cases the clay mineralogy is a better control factors in the content and stabilization SOC than clay content. Or maybe there are other soil related parameters? Is possible in the future the implementation of new grassland management practices like reduced tillage (1 time a year) together with a more cut times to incorporate part of the organic matter and so decrease the N<sub>2</sub>O formation?or other management practices?

Finally, I also think that the part about results is very short related to the discussion part.

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