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Biogeosciences Discussions

Interactive comment on "Recent above-ground biomass changes in central Chukotka (Russian Far East) using field sampling and Landsat satellite data" *by* Iuliia Shevtsova et al.

Anonymous Referee #2

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This study used ordination to relate field-based taxa projective cover and Landsat-derived vegetation indices to upscale plant biomass distribution and dynamics. The findings indicated a general increase in total AGB throughout the investigated tundra-taiga and northern taiga, whereas the tundra showed no evidence of change in AGB. I find the results are interested, methodologies are well presented, thus believe this study is worth pubulishing. However, I still find some statements are not easy to follow and some dicussions are needed. (1) The authors have stated at Page 2, line 40-50 that 'a loss of specific species from one PFT can be replaced by taxa from another PFT in response to climate change even though total AGB production remains similar'. Accordingly, at Page 3, line 65-70, I suggest the authors should also add some literatures

which found that different PFT may also have similar NDVI values and caused bias estimation of biomass based on remote sensing data. (2) Page 4, line 90-95. I don't quite understand why plot numbers for different habitats are not equal. Please explain. (3) Page 4, line 95-100. is a 50x50 cm area large enough for tree samplings, at least in this region? How to avoid arbitrary sampling in a plot with 15 m radius? (4) Page 4, line 105-110. I am a little bit confused that sampling plots in different survey years are not in the same location? If this is the case, how to study the changes in AGB if plots located differently? The authors should provide information or cite papers to suggest to what extent these results are convincing base on such kind of data series? (5) Page 6, line 140-145. It would be better if the authors provided more information about remote sensing images used in this study even though you have cited a paper here, especially for the year of 2018. (6) Page 9, line 225-230. Maybe I missed some important information, but I did not find season information from the context. I assumed that the authors aware that when studing biomass changes, same season should be the prerequisite.

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