

Interactive comment on “Plant trait response of tundra shrubs to permafrost thaw and nutrient addition” by Maitane Iturrate-Garcia et al.

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General comments This manuscript is very well articulated, and it will attract readers working on plant PFT/traits responses to permafrost thaw and subsequent nutrient concentration in gelsols in the event of climate warming. The paper adds to our knowledge about how shrubs will respond to climate warming with their strategies to fight back by trading-off between traits for their sustained growth. The manuscript does not describe how many times and how frequent the experimental sites were visited during the study years to imagine the field-work extent of this manuscript which tries to provide many solid conclusions. Without this information, it looks like the sites were set up and flowed by a couple of campaigns each year. No pre-experimental conditions of the selected blocks are provided (if they were similar of different with some

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statistical analyses) which could be another drawback of this research. The statistical analyses/models performed might need a quick look back or rerun with random effects. There are no repeated measurements over the years I know of.

Specific comments Paras 2-3: resource acquisition and conservative strategies of plants. do authors have references to these strategies studied Line 52. Would you like to put a reference for projected conditions? Line 54. I would better put a semi-colon here instead of two parentheses Line 62. Please correct referencing here I know, one can derive specific objectives form the last paragraph of hypothesis and an overview of the experimental components; however, I would better explicitly mention specific objectives helpful for researchers skimming several studies at a time Line97. Define growing season (e.g., May-Oct); I think, it must be a point when the daily maximum temperature reaches a minimum of 6-degree C. The growing season was never defined except table 1 Line102. What was the extent of a block? A schematic may help here Line105. How heating cables were buried? I hope sunny days were long enough to charge batteries and the batteries never failed Line166-170. I am afraid the random effects of the plot was not included in lme Line 350-368. Discussion tries to relate no matter what I am trying to understand why this experiment could not be completed in less than four years when the year seems not to have any specific function, for example, repeated measurements? I know the fertilizer was applied twice, the second time after two years – other than that do not know why four years are emphasized? Stem trait did not show response even after four years anyway I do not see tables S2 S3 and fig. 5 s1 mentioned in the text

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