

## ***Interactive comment on “Divergence of above- and belowground C and N pool within predominant plant species along two precipitation gradients in north China” by X. H. Ye et al.***

### **Anonymous Referee #1**

Received and published: 20 October 2014

Reported is an investigation into C and N allocation above- and belowground in three dominant plant species along two precipitation gradients in north China. The working hypothesis was that smaller proportions of aboveground biomass in drier environments would be offset by higher concentrations of N in leaves, so that the aboveground proportion of N would remain unchanged across precipitation gradients. This hypothesis was confirmed for two species. In the third species, leaf-N concentrations changed too little to offset the decrease in aboveground biomass at arid sites.

I find this a very interesting, thought-provoking study. It contains new results, is well done and clearly written. The last paragraph of the Discussion section explores possible implications of the results. Here, I would like to see a few more sentences on the

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possible interaction between leaf N concentrations and grazing behaviour. Are grazers, large mammals, but also insects, attracted by higher leaf N concentrations? If so, how would an increasing grazing pressure affect the composition of the three species studied along the precipitation gradient?

Apart from this suggestion, I have only a few minor suggestions for improving the manuscript:

Abstract, line 19: should it not “aboveground” instead of “belowground”? This would be logically consistent with the preceding part of the sentence and also with the statement made in the last sentence on page 14184.

page 14182, lines 10, 23, 24: replace “Steam” with “Stem”.

page 14183, line 12: replace “. . .there were a significant positive relationships. . .” with “. . .there was a significant positive relationship. . .”

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Interactive comment on Biogeosciences Discuss., 11, 14173, 2014.

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