Response to referees

Court Campany

26 August 2016

*Editor*

*Referee #1*

*Referee #2*

**Specific Comments:** - line 358:We corrected the text to match stats from Table 2

* line 392: We agree that thermal acclimation is not previosuly discussed before this point is made. However, the experimental design does include a +3C warming treatment, and the potential affects of warming on leaf physiology are mentioned in the introduction. As there were very few effects of climate warming observed in this aspect of the experiment, we feel it is important to address a possible explaination for the lack of observed warming effects using published findings from this experiment.
* Q: Nitrogen concentration in the leaves had a weak postive relationship with measured rates of mesophyll conductance if all leaves were considered. This weak relationship disappeared if sun and shade leaves were analyzed seperately. Since we can only speculate about the effect of aquaporins we do not include gm v. N in the manuscript.
* line 404-415:
* line 412-415: *REMKO*
* Q: On average mesophyll conductance and stomatal might be expected to be correlated when doing interspecific comparistion, such as in Flexas et al. 2013 (Figure 1). The dynamic responses of leaf physiolgy to environmental conditions within a species/canopy are likely alter this relationship. In this experiment, you can see a strong postive relationship when only sun leaves are considered (which is likely what most experiments are reporting), similar to the Flexas paper. Due to the unexpected stomatal behavior in shade leaves this relationship was reversed. We have attached a quick figure below for the referee, but have not included it in the manuscript as it can be inferred from Table 1 and Figure 3 if necessary.

