

Figure S1 Response of multiple batches of *Avena sativa* to CO₂ grown at different times during the experiment. **(a)**: Relative growth rate (RGR), **(b)**: specific leaf area (SLA). Plants in batch 1 were for a pilot experiment, batch 2 had missing low CO₂ data, batch 3 was used for the main results

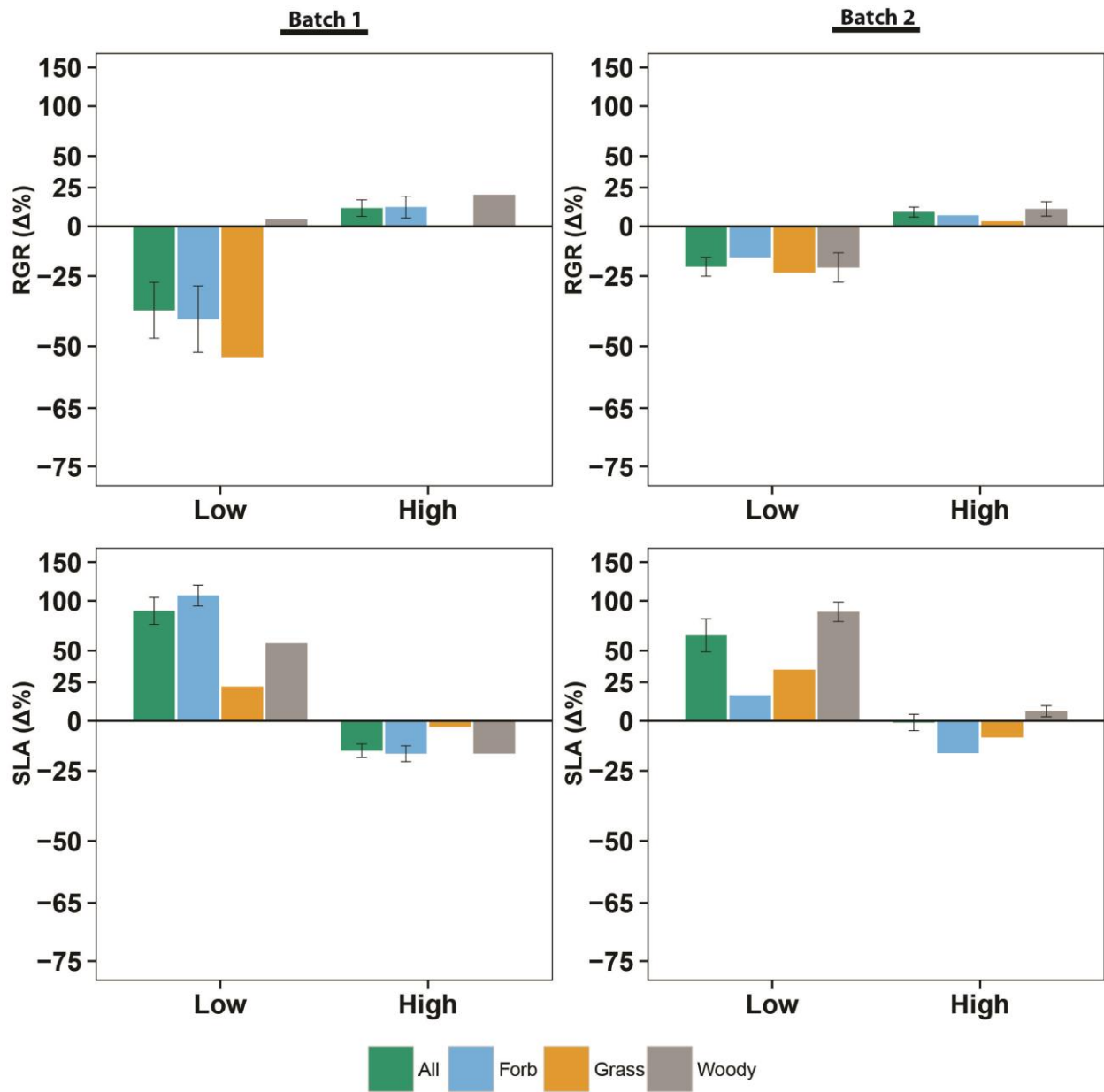


Figure S2 Comparison of RGR and SLA response to CO₂ of two batches of different species grown at different times. Relative shift in trait level at low or high CO₂ compared to ambient CO₂ for forb, grass and woody species. Bars indicate percentage shift in trait value at low CO₂ (160 ppm) and high (750 ppm) CO₂ compared to trait value at ambient (450ppm) CO₂. Axes are natural log transformed so that the size of the bars at a 50% decrease or a 100% increase is the same (reflecting a factor 2 adjustment). Green bars: all species, blue bars: forb species, orange bars: grass species, grey bars: woody species. Error bars give SE if there are multiple species per type.

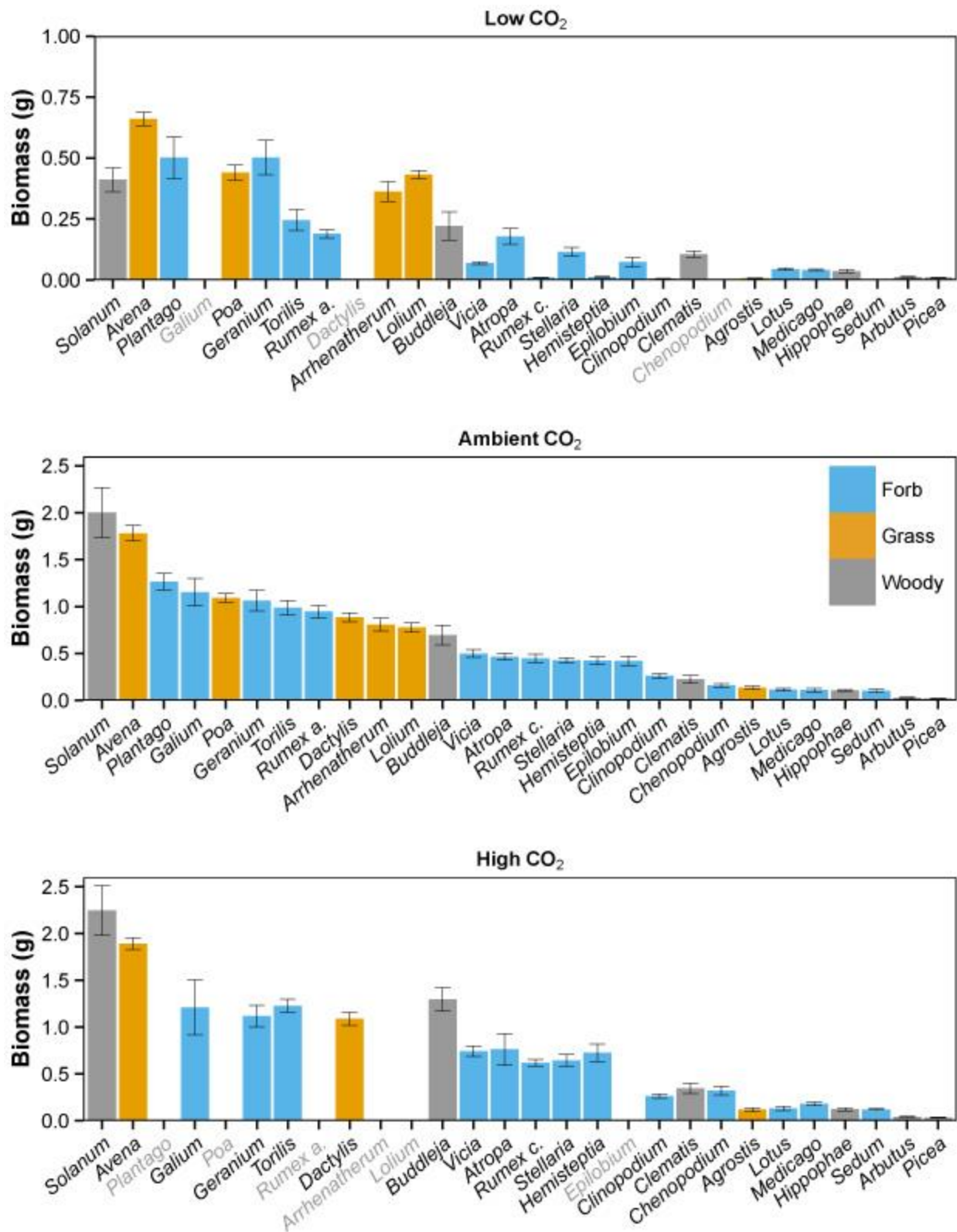


Figure S3 Plant species biomass (g) ranking at 160 ppm, 450 ppm and 750 ppm CO₂. Species are ordered by RGR at 450 ppm CO₂. Light grey species names indicate species is missing at this CO₂ treatment. Note the different axis scale at low CO₂. Orange bars: grass species, blue bars: forb species, grey bars: woody species. Error bars denote SE.

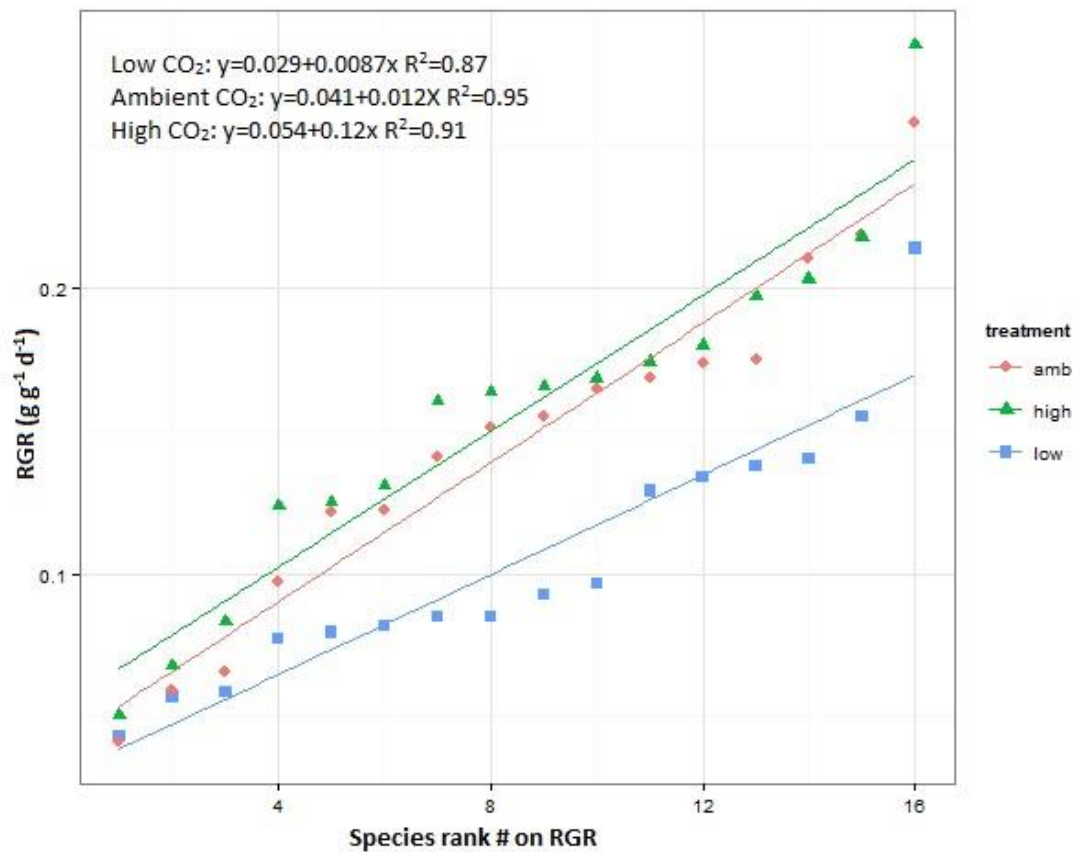


Figure S4 Plant relative growth rate rank vs Relative Growth Rate at 160 ppm, 450 ppm and 750 ppm CO₂. Species are ordered by RGR from low to high at each CO₂ level. The slope between rank and RGR is significantly lower than the slopes at ambient and high CO₂ ($p<0.05$) which shows that the difference between the fastest and slowest grower is reduced. Red: 450 ppm, Green: 750 ppm, Blue: 160 ppm

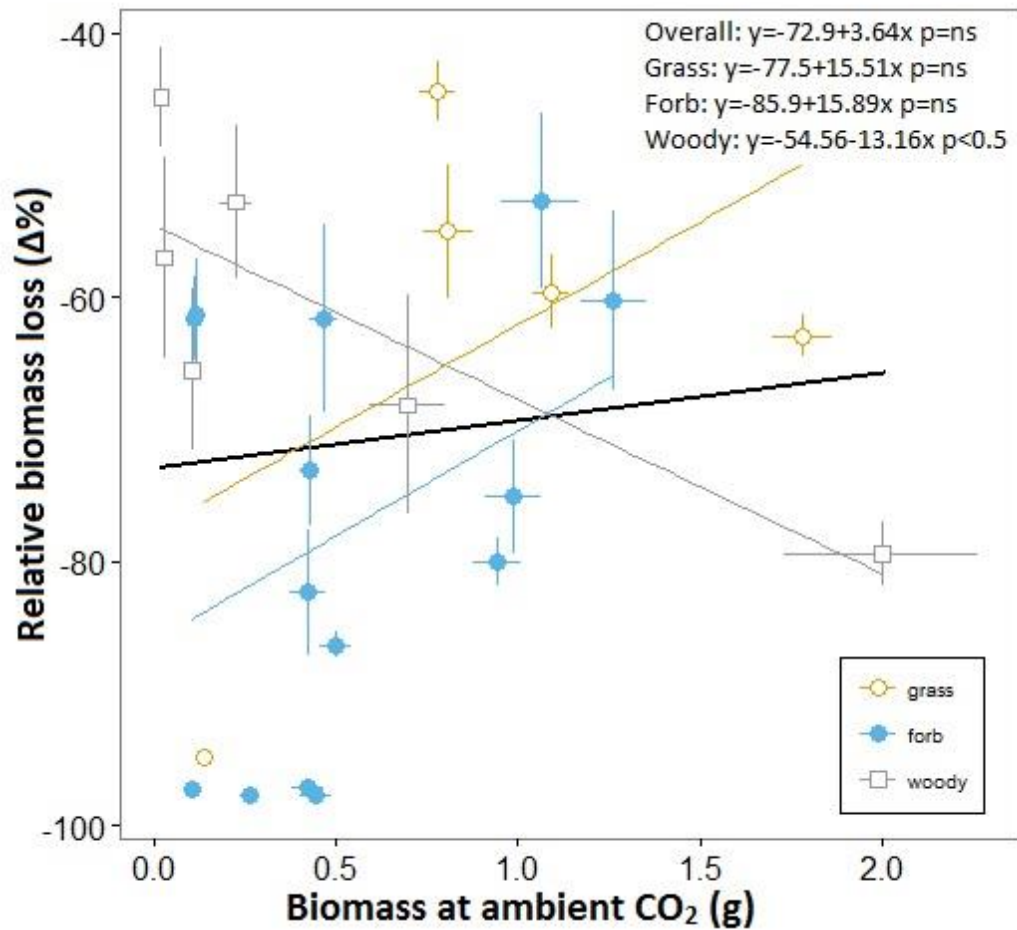


Figure S5 Relative amount of biomass lost at low (160) CO₂ as compared to ambient CO₂. Relative biomass difference (Δ%) at low CO₂ shows no relationship with biomass at ambient CO₂. Blue circles: forb species, orange open circles: grass species, grey open squares: woody species, Black line: overall regression. Error bars give SE

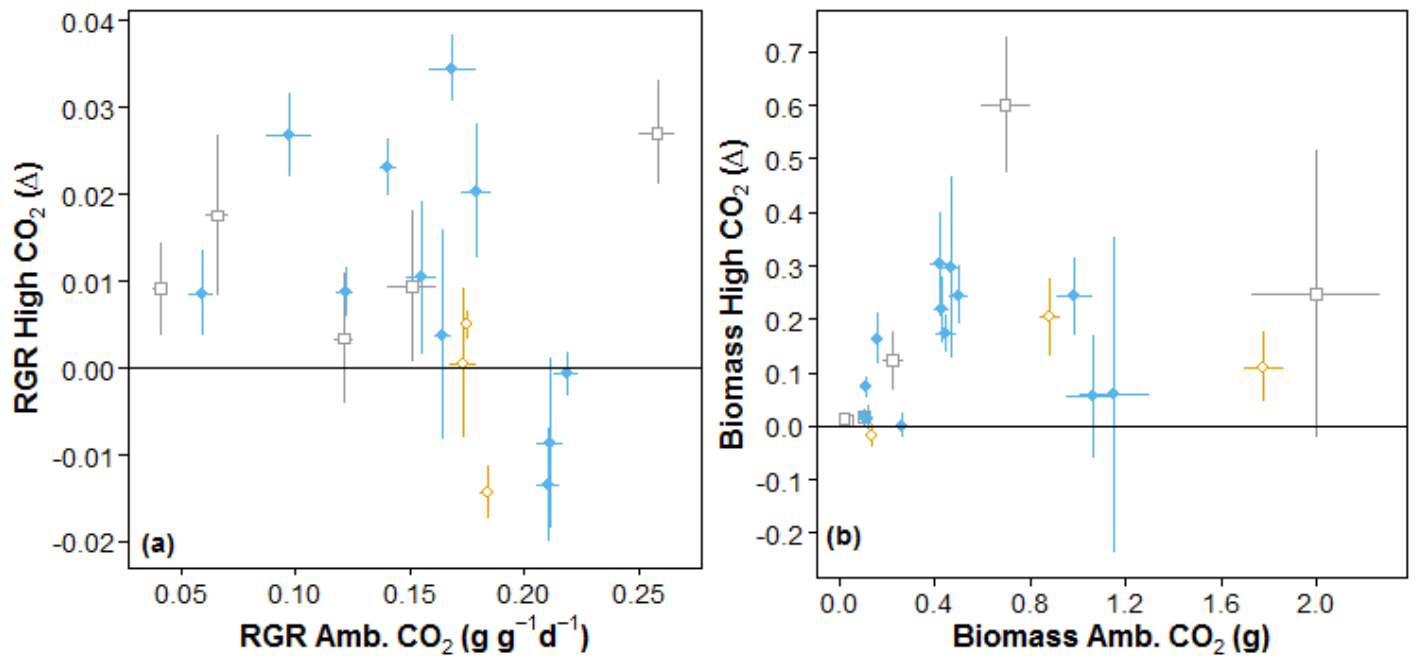


Figure S6 Difference in growth rate and plant biomass at future high (750 ppm) CO₂ compared to current ambient (450 ppm) CO₂. **a.** Relative Growth Rate difference at low CO₂ shows no relationship to growth rate at ambient CO₂. **b.** Biomass difference at low CO₂ shows no relationship with biomass at ambient CO₂. Blue circles: forb species, orange open circles: grass species, grey open squares: woody species. Error bars give SE

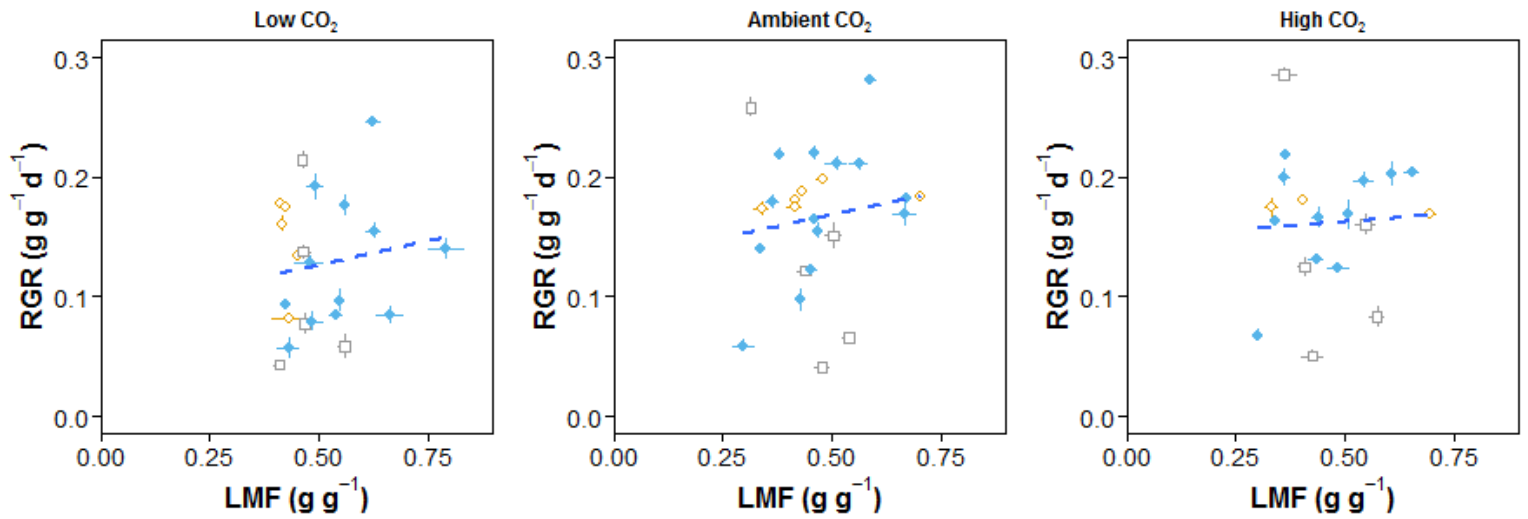


Figure S7 Relationship between leaf mass fraction (LMF) and relative growth rate (RGR) at past low (160 ppm), current ambient (450 ppm) and future high (750 ppm) CO₂. No significant relationship between LMF and RGR was found. Points indicate species mean RGR and LMF with SE; Blue circles: forb species, orange open circles: grass species, grey open squares: woody species.