Leaf Scale Measurements - but limited in time

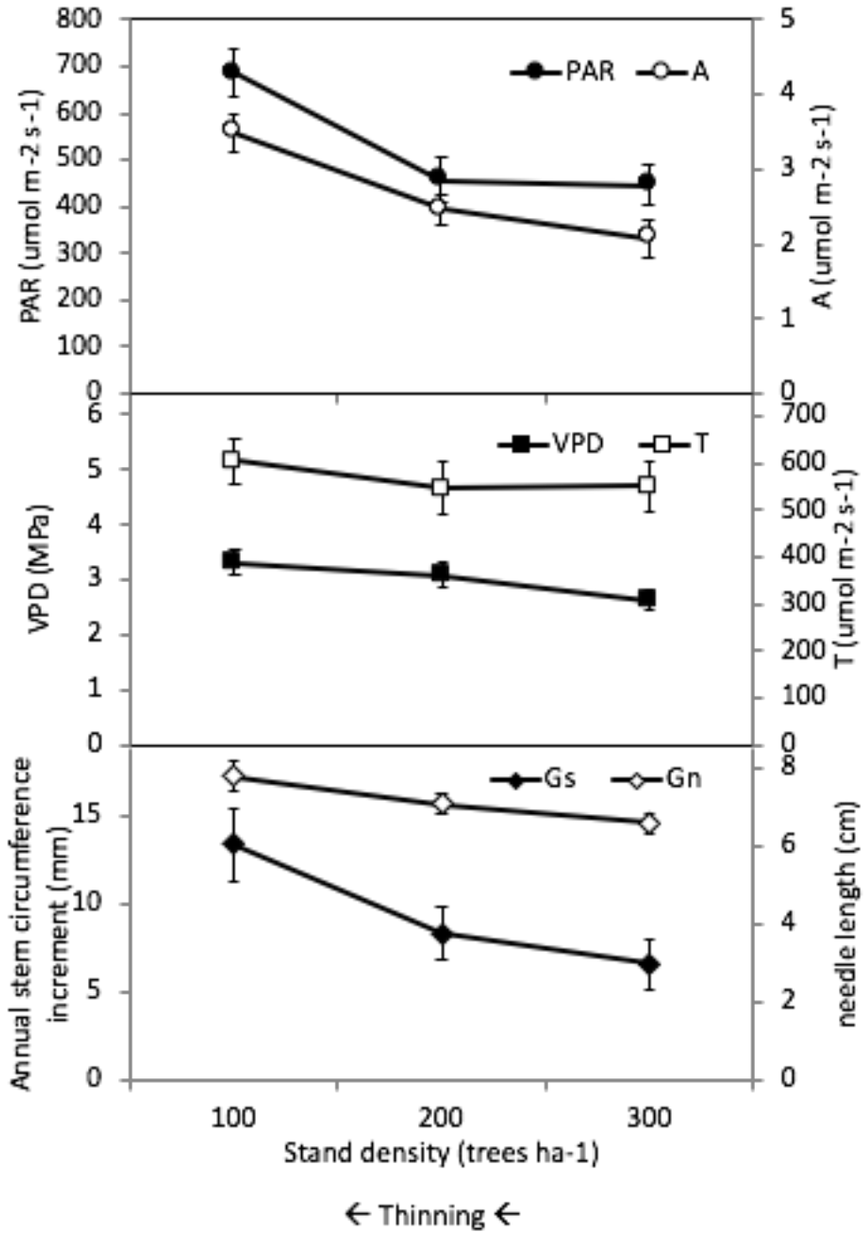

Fig. 2. Stand-density influence on leaf-scale photosynthetically active radiation (PAR) and net assimilation (A), (top); on vapor pressure deficit (VPD) and leaf transpiration (T), (middle); and on stem growth and needle length (bottom) in Yatir forest. Each data-point at top and middle panels is the mean (±SE) of 120 observations in 10 field days (2010-2012). Stem growth and needle length data-points are means (±SE) of 252 and 84 observations, respectively, in 36 field days (2010-2016).

With density reduction, leaf scale

- PAR increases
- VPD, Transpiration similar
- Assimilation increases

Improved leaf scale water use efficiency - because of increased light

Empirical scaling to estimate water use - demonstrates compensation of evaporation