

Missing adequate growth response of coniferous tree species to climate warming at the Alpine forest line

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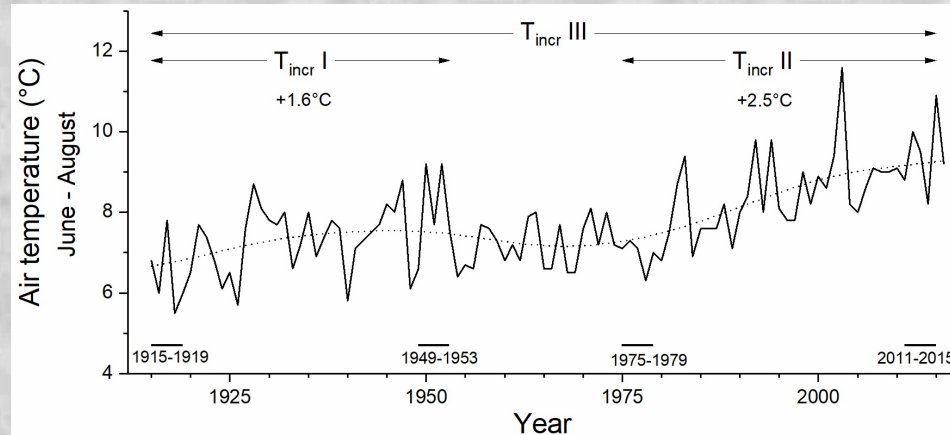


Fig. 1 Two phases of climate warming (T_{incr} I and II) in the Alpine region in the period 1915–2015 (data from Auer et al. 2007).

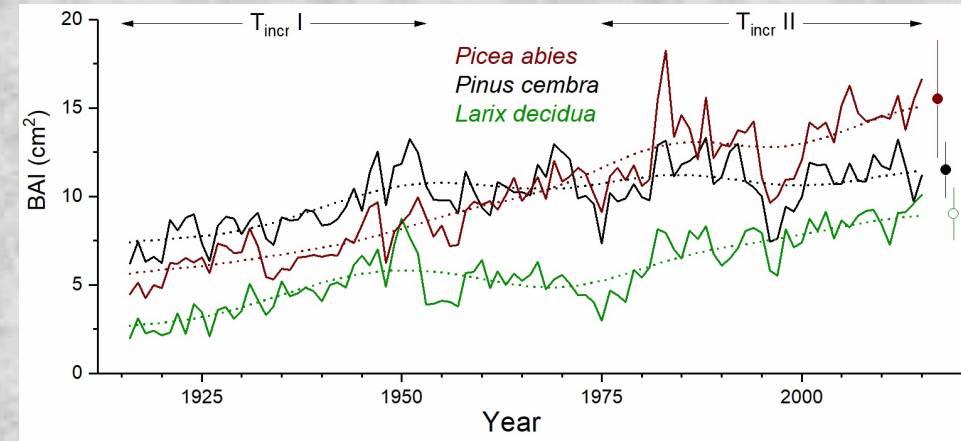


Fig. 2 Trend in basal area increment (BAI) from 1915–2015 of conifers at the alpine forest line in the Central European Alps ($n > 50$ trees per species).

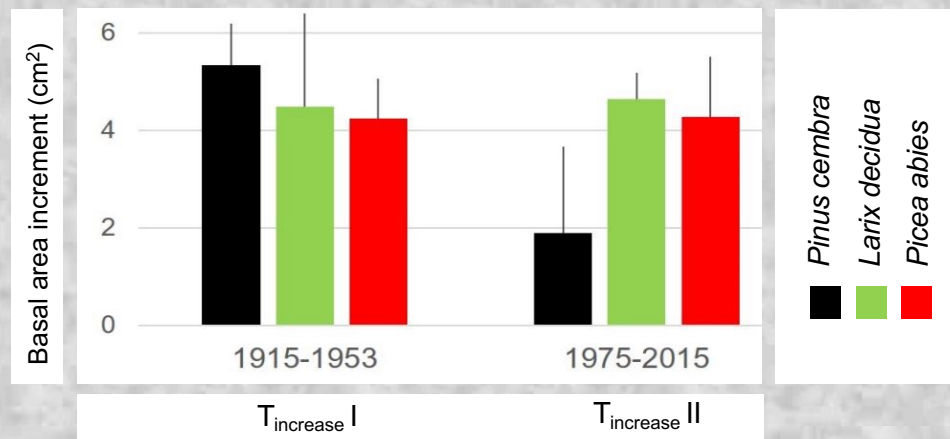


Fig. 3 Increase in BAI during two phases of climate warming.

Conclusions

We explain missing adequate growth response to recent climate warming by

- (i) intensified competition for resources (nutrients, light, water) in increasingly denser stands leading to changes in carbon allocation among tree organs, and
- (ii) species-specific sensitivity to climate variables beyond the growing season.

For more details please see Oberhuber et al. (2020) *Forests*, doi:10.3390/f11020132