

Highlights

1. We addressed growth and water use strategies of four Mediterranean tree species.
2. Water supply and demand affected tree water deficit interactively, not additively.
3. Transpiration and tree water storage dynamics were generally coupled to drying soil.
4. Pines showed the most conservative water use and the largest stem growth rates.
5. Pines minimised drought-related declines in growth-based water use efficiency.

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