

Appendix S1. Microscopic transverse section (100×) of a *Pinus longaeva* tree ring used in this study. For each tracheid, lumen area (la) is given by the horizontal surface within cell walls; cell diameter (cd) is the sum of lumen radial diameter and the radial thickness of its adjacent walls; cell wall thickness (wt) is given by the average of the left and right radial wall thickness.

