Climate in Medieval Time

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Supporting Online Material: Materials and Methods

Data sources for Perspective figure

Data presented in the Perspective figure are from a variety of paleoclimate archives distributed around the world. It is sometimes arguable whether each series is an ideal proxy for temperature. Here we adopt the interpretation of the original authors, who all present the records in terms of paleotemperature. Numbers refer to those shown in the figure.

1-3. Decadal mean $\delta^{18}O$ from ice caps in Peru and Bolivia (*S1*). Data kindly provided by E. Mosley-Thompson.

4. The mean of 8 conservatively standardized tree-ring chronologies from northern Patagonia (both Argentina and Chile) (*S2*) was inverted, because these chronologies have an inverse relationship with austral summer temperatures. Data kindly provided by R. Villalba.

5. Stalagmite-derived regional annual maximum temperature for northeastern South Africa (*S3*). Data kindly provided by K. Holmgren.

6. Austral summer temperatures from New Zealand based on the Oroko Swamp (*S4*), a silver pine tree-ring chronology that was standardized using the RCS method (*S5*). This method is designed to conserve low-frequency variability. Data kindly provided by E.R. Cook.

7. Warm-season temperature from Tasmania based on the Mt. Read Huon pine tree-ring chronology (*S6*), which was standardized using the RCS method. Data from (*S7*).

8. δD for Talos Dome, East Antarctica (*S8*). Data from (*S9*).

9-11. Decadal mean $\delta^{18}O$ from ice caps in Tibet (*S10*). Data kindly provided by E. Mosley-Thompson.

12. Summer temperature from 3 tree-ring series in the Sierra Nevada, California (*S11*). This record was used in preference to the RCS-series for this region used by Esper et al. (*S12*) because L. Graumlich concluded that the tree-ring series contained both temperature and precipitation signals, which she sought to separate (*S11*). Data kindly provided by L. Graumlich.

13. Speleothem-derived May-August temperature from Shihua Cave, near Beijing, China (*S13*).

14. Winter temperatures over East Asia from historical documents (*S14*). Data kindly provided by Quansheng Ge.

15. Summer (June, July, August) temperature derived from varve sediment thickness, southeastern Baffin Island, Nunavut, Canada (*S15*). Data kindly provided by K. Hughen.

16. Tree-ring indices from a site in Mongolia. The temperature-sensitive chronology was conservatively standardized to retain low-frequency variability. Data digitized from (*S16*).

17. Mean annual temperature of northern hemisphere from multi-proxy composite (*S17*).

18. Regional curve-standardized (RCS) temperature-sensitive tree-ring chronology from the Polar Urals (*S12*). Data kindly provided by E.R. Cook.

19. Regional curve-standardized (RCS) temperature-sensitive tree-ring chronology from the Taimyr Peninsula (*S12*). Data kindly provided by E.R. Cook.

20. Regional curve-standardized (RCS) temperature-sensitive tree-ring chronology from Tornetrask, Northern Sweden (*S12*). Data kindly provided by E.R. Cook.

21. Early summer temperature-driven sediment flux (g cm^{-2} yr^{-1}) from varved sediments, Murray Lake, Ellesmere Island, Nunavut, Canada (*S18*). Data kindly provided by W. Patridge.

22. ^{10}Be is considered to be a proxy for solar activity and may be indicative of changes in solar irradiance (*S19*, *S20*). Data from (*S21*).

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