

# Climate - The Movie

<https://www.youtube.com/watch?v=A24fWmNA6IM>

## Zusammenfassung

Aussage im Film (Zeitpunkt 12:56):

Dem durch die Industrialisierung bewirkten europäischen Temperaturanstieg ist ein natürlicher Temperaturanstieg überlagert: Wir befinden uns am Ende des Little Ice Age.

Frage an die Klimatologen im IPCC:

Ist das Little Ice Age in den Earth System Models des Coupled Models Intercomparison Projects (CMIP) 5 oder 6 berücksichtigt worden?

Antwort in Fig. 3.2 des Kapitels 3 "Human Influence on the Climate System" im IPCC Assessment Report 6 der Working Group I:

Nein, offensichtlich ist das nicht der Fall. Das bedeutet: Wenn die anthropogenen Kohlenstoffemissionen abrupt enden würden, lieferten die Earth System Models ein allmähliches Ende der Erderwärmung. Auf Grund des Little Ice Age könnte die Erderwärmung aber weiter ansteigen.

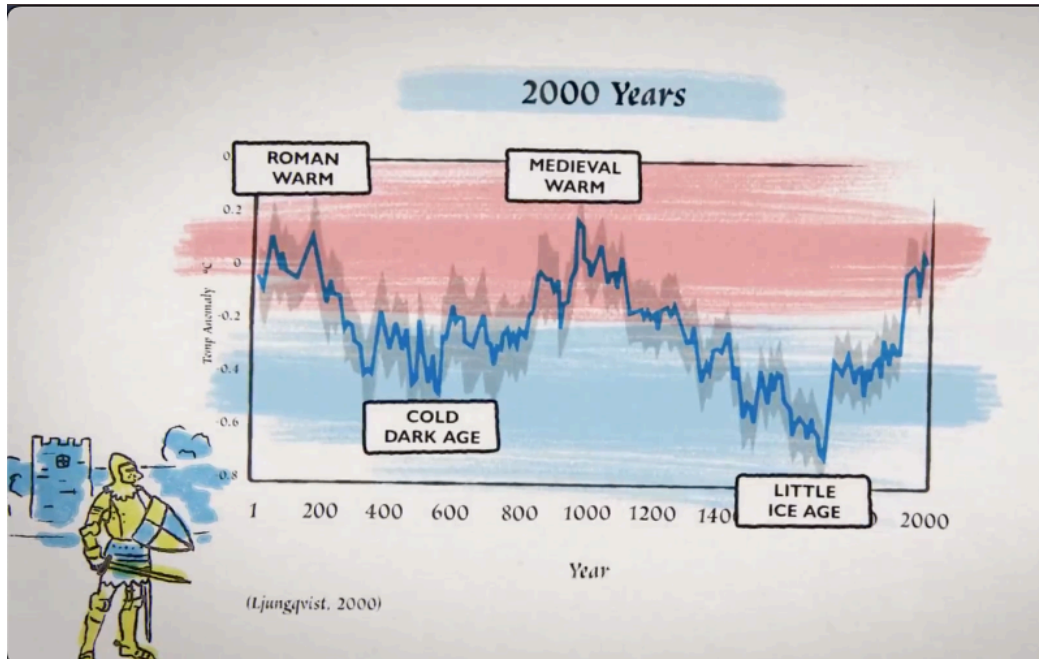


Abbildung zum Zeitpunkt: 12:55 im Film "Climate - the Movie"  
([https://youtu.be/A24fWmNA6IM?si=RrXYh144\\_5LqP598&t=775](https://youtu.be/A24fWmNA6IM?si=RrXYh144_5LqP598&t=775))

-----Ende Climate - The Movie -----

Quelle dieser Graphik im Film "Climate - The Movie": Ljungqvist, A New Reconstruction ...., August 2010

## A New Reconstruction of Temperature Variability in the Extra-tropical Northern Hemisphere During the Last Two Millennia

Fredrik Charpentier Ljungqvist, August 2010

Geografiska Annaler Series A Physical Geography 92(3):339 - 351

DOI: [10.1111/j.1468-0459.2010.00399.x](https://doi.org/10.1111/j.1468-0459.2010.00399.x)

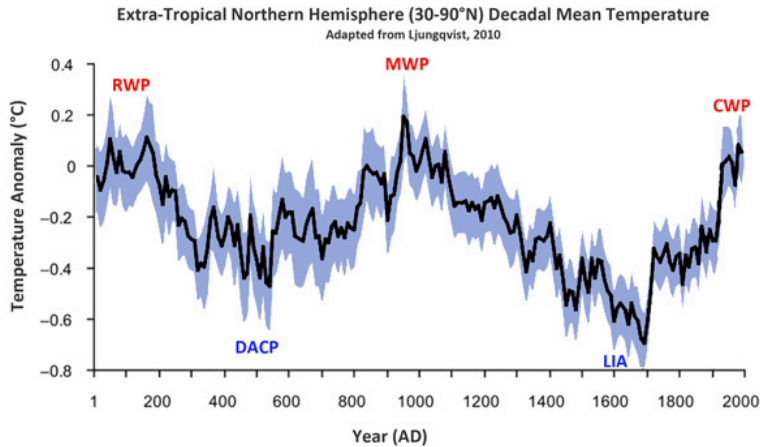


Figure 1. Reconstructed extra-tropical (30–90°N) mean decadal temperature variations relative to the 1961–1990 mean of the variance-adjusted 30–90°N CRUTEM3+HadSST2 instrumental temperature data of Brohan et al. (2006) and Rayner et al. (2006). Adapted from Ljungqvist (2010).  
RWP = Roman Warm Period, DACP = Dark Age Cold Period, MWP = Medieval Warm Period, LIA = Little Ice Age, CWP = Current Warm Period

### How does Ljungqvist's reconstruction compare to others?

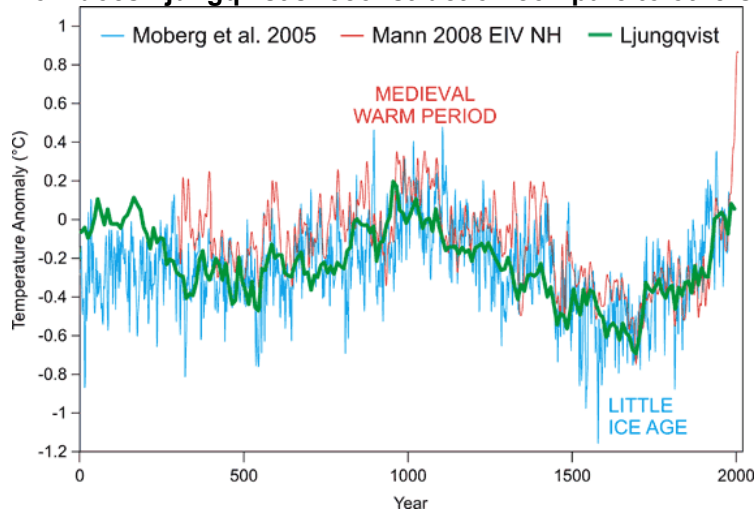
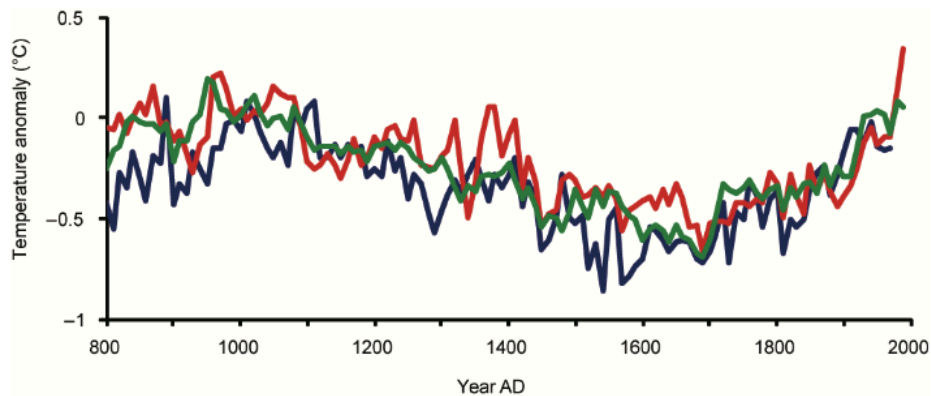


Figure 1: Moberg et al. 2005 NH (blue), Mann et al. 2008 EIV NH (red), and Ljungqvist 2010 NH (green). Courtesy of Robert Way and John Cook.



— Moberg et al. (2005) — Mann et al. (2008) — Ljungqvist 2010

Fig. 1. Comparison of three recent millenium-long multi-proxy Northern Hemisphere temperature reconstructions: decadal means of Moberg et al. (2005), the 'error-in-variables' (EIV) regression method variant of Mann et al. (2008), and the extra-tropical Northern Hemisphere reconstruction by Ljungqvist (2010).

Quelle: Ljungqvist, A Regional approach to the medieval ..., 2010 (s.u.)

Ljungqvist, F.C., 2010: An improved reconstruction of temperature variability in the extra-tropical Northern Hemisphere during the last two millennia. *Geografiska Annaler*, 92A: in press.

Mann, M.E., Zhang, Z., Hughes, M.K., Bradley, R.S., Miller, S.K., Rutherford, S. and Ni, F., 2008: Proxy-based reconstructions of hemispheric and global surface temperature variations over the past two millennia. *Proceedings of the National Academy of Sciences, USA*, 105: 13252–13257.

Moberg, A., Sonechkin, D.M., Holmgren, K., Datsenko, N.M., and Karlén, W., 2005: Highly variable Northern Hemisphere temperatures reconstructed from low- and high- resolution proxy data. *Nature*, 433: 613–617.

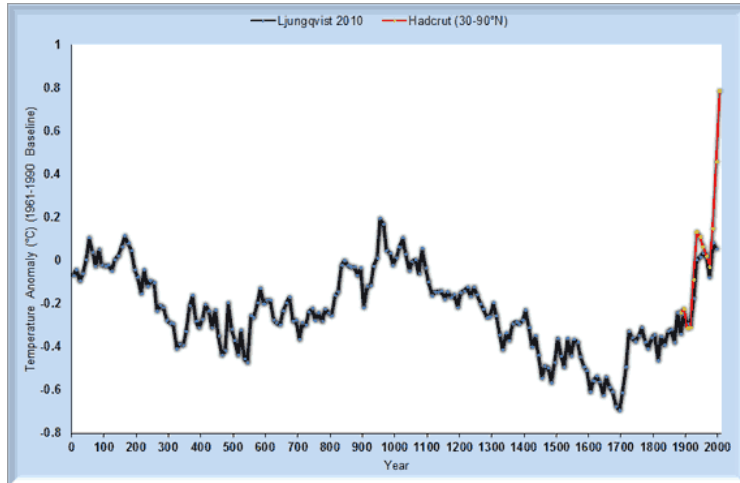


Figure 2: Ljungqvist (2010) 30-90°N decadal averages (black) vs. HadCRUT land-ocean 30-90°N decadal averages (red). Courtesy of Robert Way.

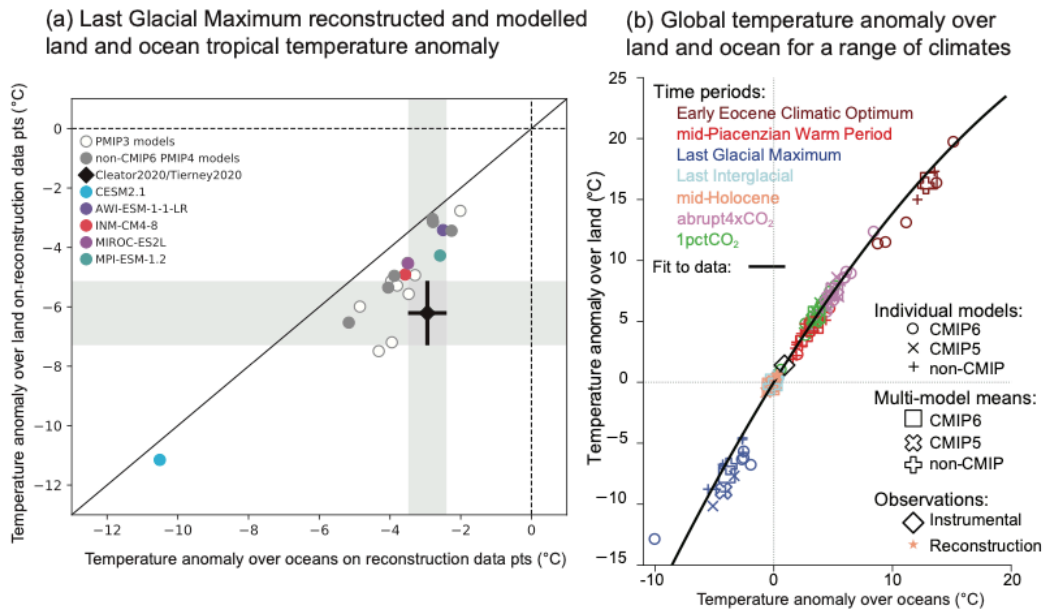
The NIPCC also claims that if the MWP (Medieval Warm Period) was as hot as today (which it wasn't), that means that current global warming and climate change could be natural. It's true, hypothetically, the current warming could be natural, *if there were a natural mechanism causing it*. However, there is no such **known** mechanism. There is a [measured energy imbalance caused by the increase in atmospheric greenhouse gases](#). We know that this energy must cause the planet to warm, and how much it warms depends on the climate sensitivity to the energy imbalance. (Source: <https://skepticalscience.com/print.php?r=343>)

-----Ende How does Ljungqvist's reconstruction ...-----

IPCC Assessment Report 6, Working Group I, Chapter 3

### Human Influence on the Climate System

[https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_Chapter03.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter03.pdf)



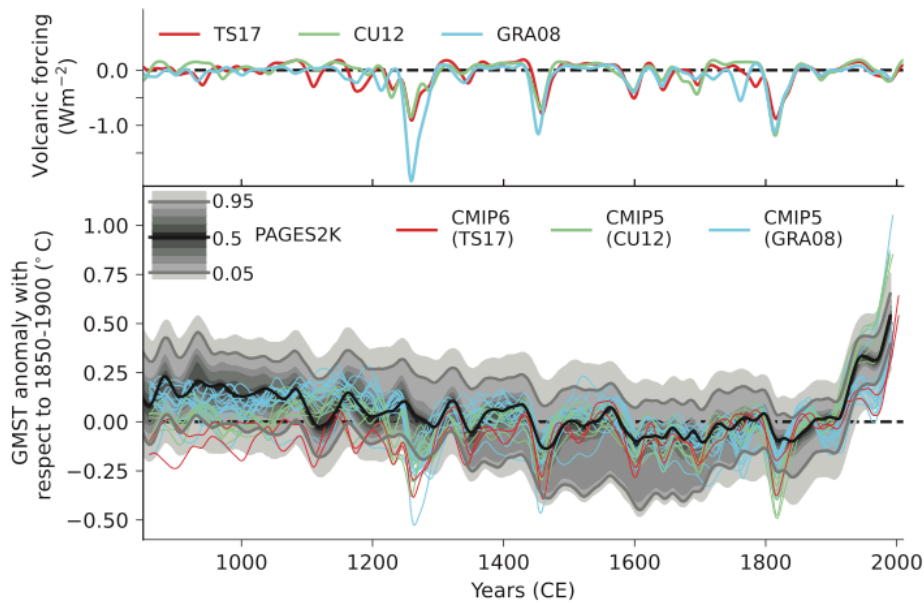


Figure 3.2 | Changes in surface temperature for different paleoclimates. (a) Comparison of reconstructed and modelled surface temperature anomalies for the Last Glacial Maximum over land and ocean in the Tropics (30°N–30°S). Land-based reconstructions are from Cleator et al. (2020). Ocean-based reconstructions are from Tierney et al. (2020b). Model anomalies are calculated as the difference between Last Glacial Maximum and pre-industrial control simulations of the PMIP3 and PMIP4 ensembles, sampled at the reconstruction data points.

(b) Land–sea contrast in global mean surface temperature change for different paleoclimates. Small symbols show individual model simulations from the CMIP5 and CMIP6 ensembles. Large symbols show ensemble means and assessed values.

(c) Upper panel shows time series of volcanic radiative forcing, in  $W m^{-2}$ , as used in the CMIP5 (Gao et al., 2008; Crowley and Unterman, 2013; see also Schmidt et al., 2011) and CMIP6 (850 CE to 1900 CE from Toohey and Sigl (2017), 1850–2015 from Luo (2018)). The forcing was calculated from the stratospheric aerosol optical depth at 550 nm shown in Figure 2.2. Lower panel shows time series of global mean surface temperature anomalies, in °C, with respect to 1850–1900 for the CMIP5 and CMIP6 past1000 simulations and their historical continuation simulations. Simulations are coloured according to the volcanic radiative forcing dataset they used. The median reconstruction of temperature from PAGES 2k Consortium (2019) is shown in black, the 5–95% confidence interval is shown by grey lines and the grey envelopes show the 1st, 5th, 15th, 25th, 35th, 45th, 55th, 65th, 75th, 85th, 95th, and 99th percentiles. All data in both panels are band-passed filtered, where frequencies longer than 20 years have been retained. Further details on data sources and processing are available in the chapter data table (Table 3.SM.1).

**Ergebnis: Keines der CMIP sieht die Medieval Warm Period.**

**Frage also: Ist dann die Überlagerung der industriellen CO2-Emissionen mit den Einflüssen der gegenwärtig auslaufende Eiszeit in den Earth System Models berücksichtigt?**

-----Ende Human Influence on the Climate System -----

## A regional approach to the medieval warm period and the little ice age

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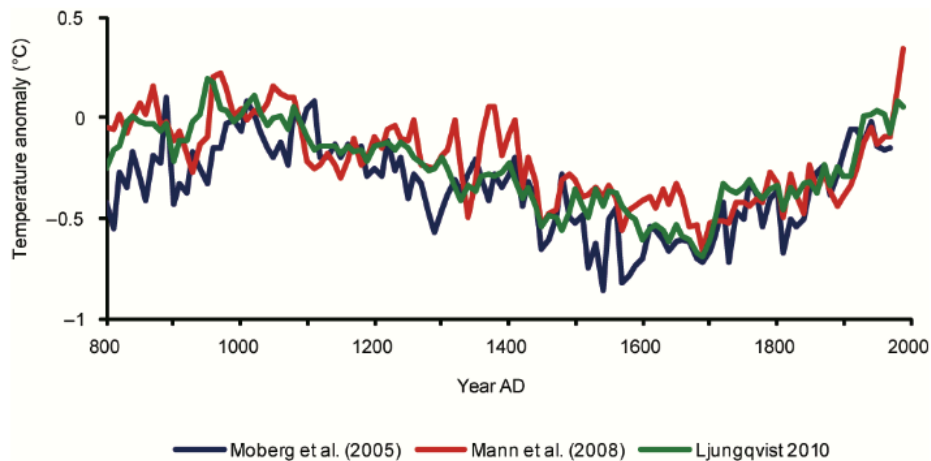


Fig. 1. Comparison of three recent millenium-long multi-proxy Northern Hemisphere temperature reconstructions: decadal means of Moberg et al. (2005), the 'error-in-variables' (EIV) regression method variant of Mann et al. (2008), and the extra-tropical Northern Hemisphere reconstruction by Ljungqvist (2010).

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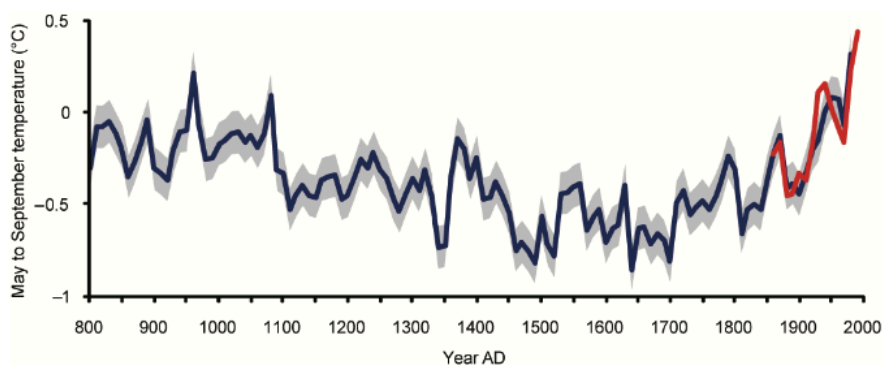


Fig. 9. May to September temperature reconstruction for Central Europe (blue line) calibrated to instrumental temperatures for the Alp region (red line) with 2 standard deviation error bars (grey shading).

#### Conclusion

.... In order to truly assess the possible global or hemispheric significance of the observed pattern, we need much more data. The unevenly distributed palaeotemperature data coverage still seriously restricts our possibility to set the observed 20<sup>th</sup> century warming in a global long-term perspective and investigate the relative importance of natural and anthropogenic forcings behind the modern warming.

-----Ende Ljungqvist: A regional approach ...-----

*Climate sensitivity's definition:*

"The change in the surface temperature in response to a change in the atmospheric carbon dioxide ( $CO_2$ ) concentration or other radiative forcing."<sup>(3):2223</sup>