Supplementary materials

Table S1. Correlation matrix between tree-ring variable chronologies (TRW, EWW, LWadj, BI, DBI and MXD for each site. The correlation was computed over the 1966–2001 period.

	Polar Urals					Northern Urals				
	TRW	EWW	LWadj	BI	DBI	TRW	EWW	LWadj	BI	DBI
EWW	**0.99**					**0.98**				
LWadj	0.25	0.16				*0.34*	0.15			
BI	**0.62**	**0.62**	*0.34*			**0.45**	<u>0.44</u>	0.25		
DBI	**0.72**	**0.72**	*0.35*	**0.87**		**0.64**	**0.63**	*0.29*	**0.91**	
MXD	**0.50**	**0.51**	0.26	**0.73**	**0.78**	**0.60**	**0.54**	<u>0.38</u>	**0.60**	**0.69**

Coefficients in bold type are significant at $P < 0.001$, underlined coefficients are significant at $P < 0.01$ and coefficients in italic are significant at $P < 0.05$.

Table S2. Monthly temperature and precipitation over the 1966–2020 period.

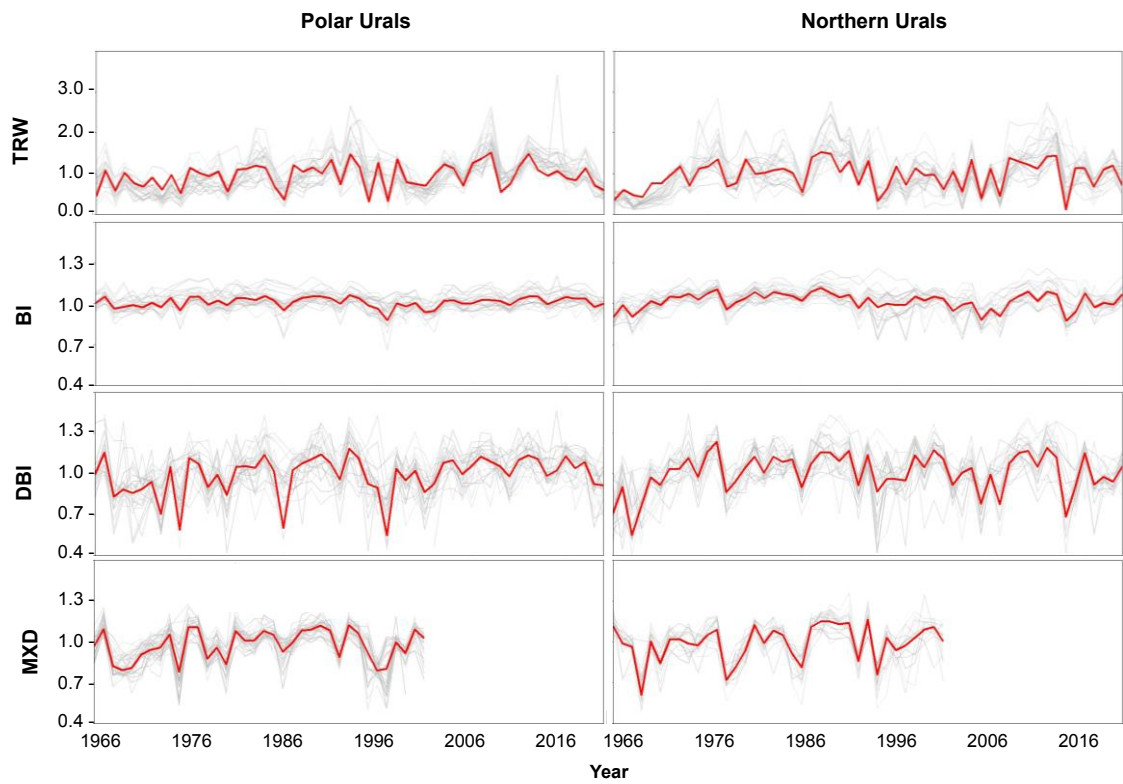|		May	June	July	August	September	Annual
PU	Temp.	-0.6	9.2	14.6	11.2	5.5	**-5.8**
	Precip.	39	55	65	64	47	**456**
NU	Temp.	7.9	13.4	15.9	12.9	7.1	**-0.2**
	Precip.	63	92	101	100	84	**851**

Fig. S1. Individual (gray) and mean (red) tree-ring width (TRW) residual chronologies, Blue Intensity (BI) and Delta Blue Intensity (DBI) standardized chronologies for the 1966–2020 period and maximum latewood density (MXD) standardized chronologies for the 1966–2001 period.
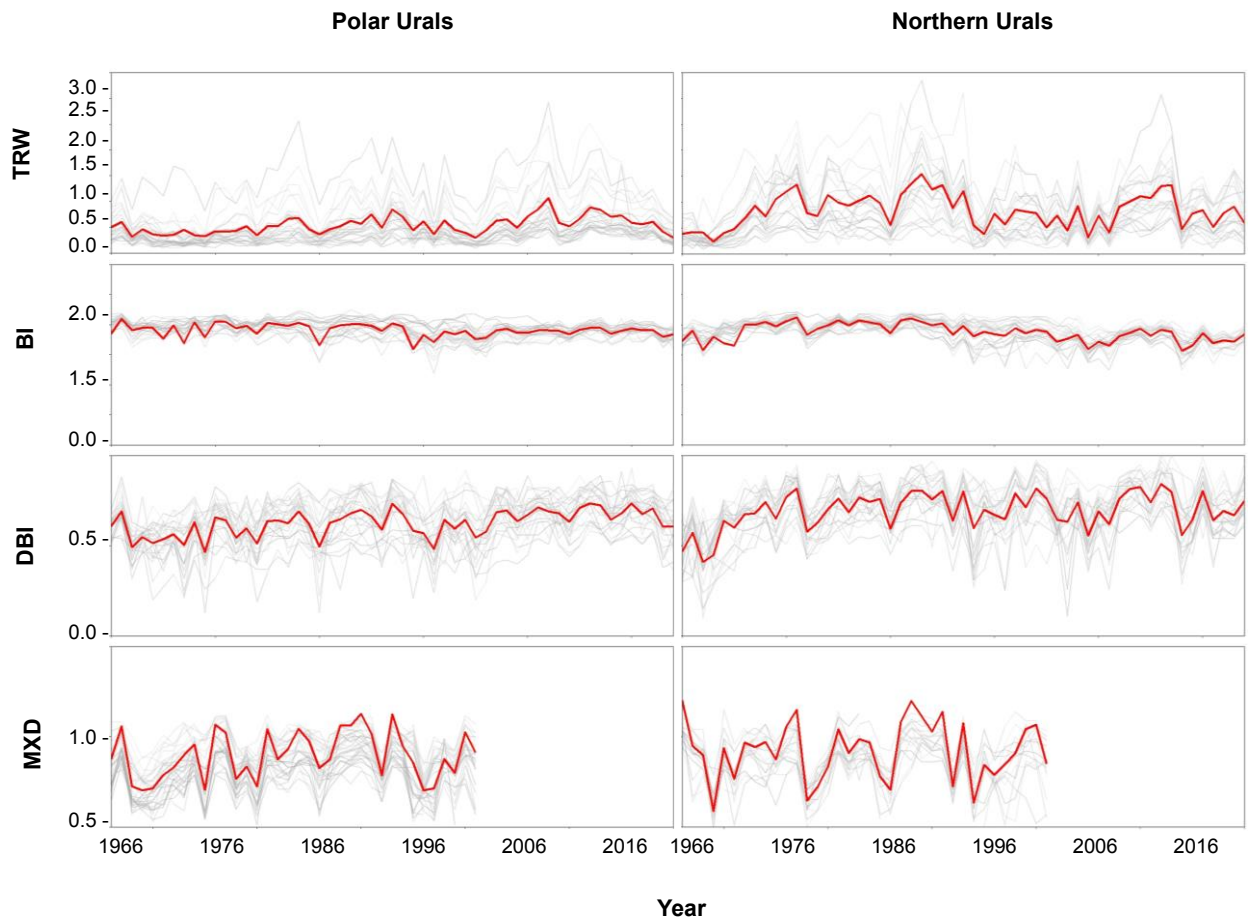
Fig. S2. Individual (gray) and mean (red) tree-ring width (TRW), Blue Intensity (BI) and Delta

Blue Intensity (DBI) row series for the 1966–2020 period and maximum latewood density
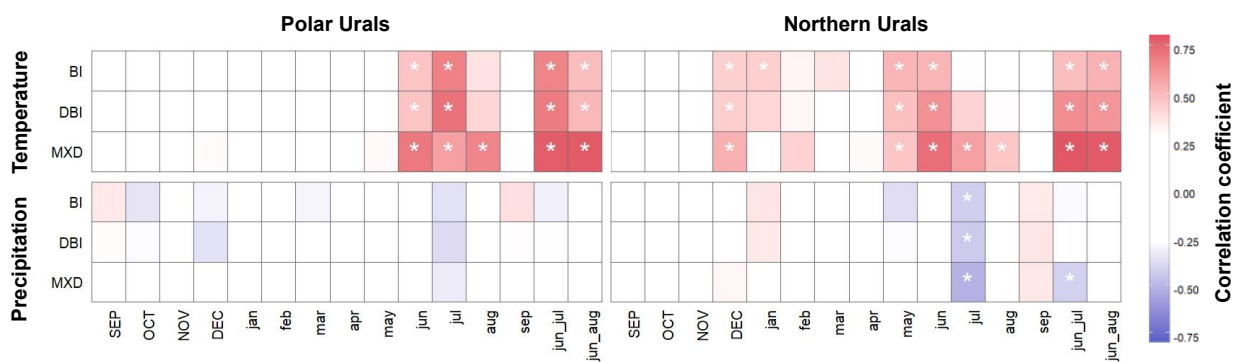
(MXD) row series for the 1966–2001 period.

Figure S3. Correlations (Pearson's coefficient) between blue intensity and maximum wood

density derived chronologies with mean monthly temperature and total monthly precipitation at

the Polar Urals and the Northern. Correlations were calculated from September of the previous

year to September of the current growth year for the 1966–2001 period. The asterisk represents $P < 0.01$ and no asterisk $P < 0.05$.