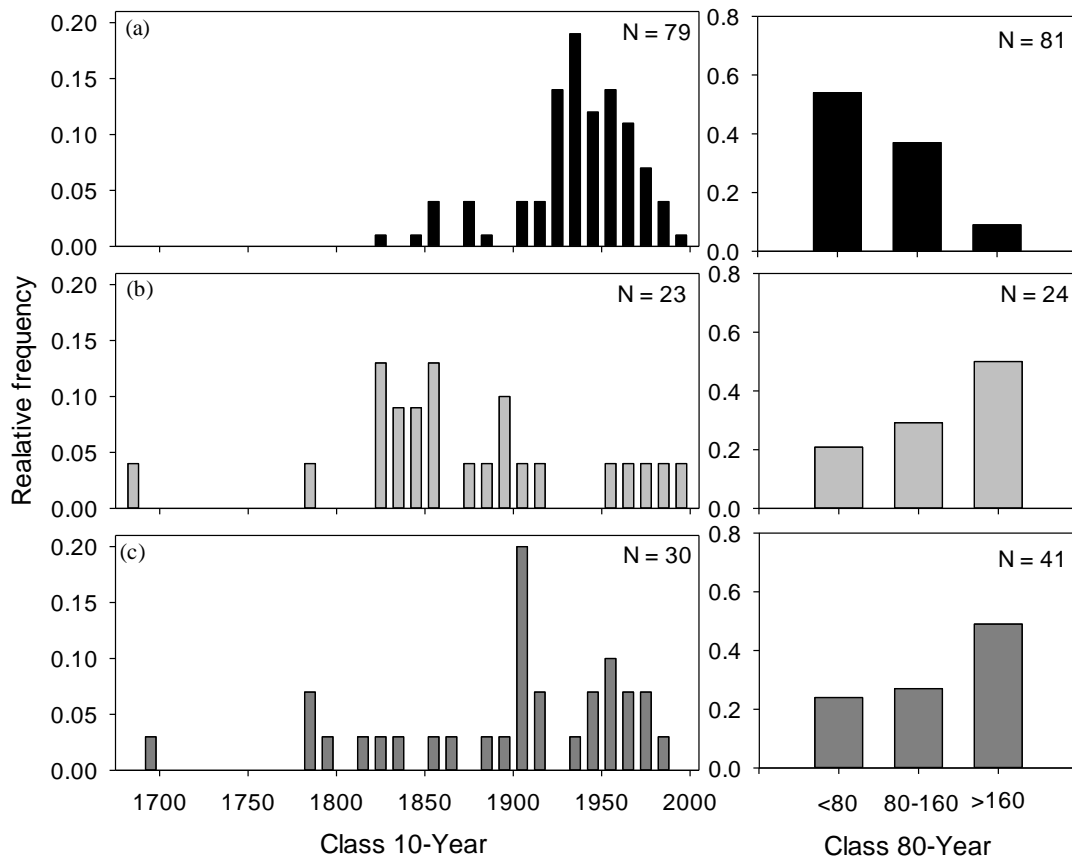
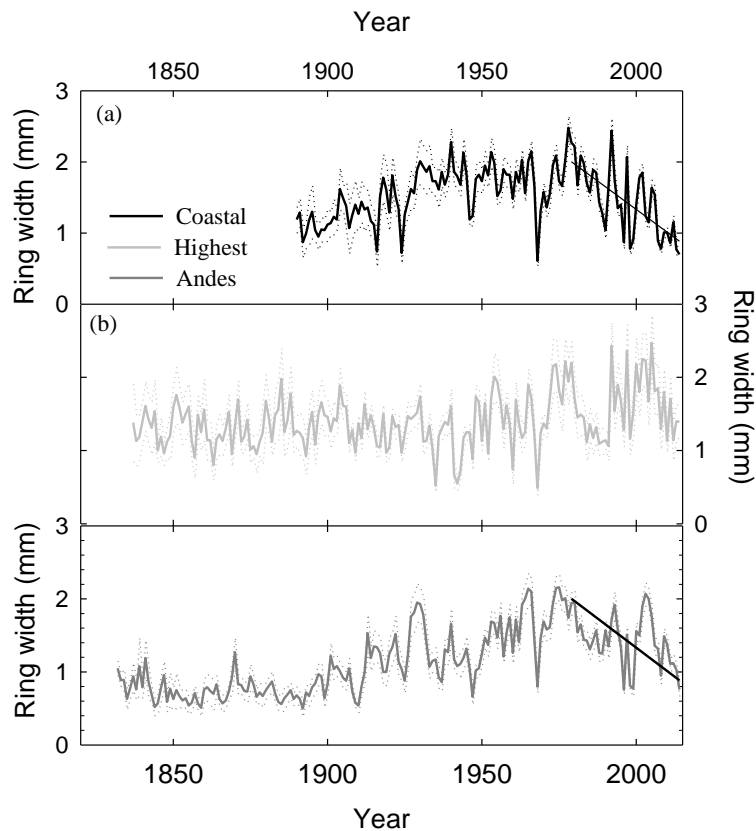


**Figure S1.** (a) Mean radial growth rate in mm year<sup>-1</sup> ( $\pm$  error standard (SE) in shaded gray line) of regional chronology of *N. macrocarpa* populations (black line). Orange square represents the piecewise regression model that shows the break year since 1980 with  $p < 0.001$ . (b) Linear trends of climatic variables (precipitation [pp], temperature [T], and atmospheric CO<sub>2</sub> concentrations [CO<sub>2</sub>]) since 1980.



**Figure S2.** Relative frequency of trees in the three cluster populations according to age classes. (a) Coastal, (b) Highest, and (c) Andes.



**Figure S3.** Ring-width chronologies according to each population cluster: (a) Coastal, (b) Highest, and (c) Andes. Shaded lines represent  $\pm$  SE. Black lines show the break year according to the piecewise

regression model ( $p < 0.001$ ), which took place between 1978 and 1979 in the Andes and Coastal populations (Highest populations did not show a significant break point).

**Table S1.** Descriptive statistics for the 10 tree-ring chronologies of *N. macrocarpa* (see Table 1 for chronology code definitions).

Code <sup>a</sup>	Record Period <sup>b</sup>	Raw Data		Residual Chronologies		
		Mean Sens. <sup>c</sup>	AR1 <sup>d</sup>	RBar $\pm$ SE <sup>e</sup>	EPS <sup>f</sup>	SPEI <sup>g</sup>
<b>PLC1</b>	1929-2014	0.421	0.617	0.33 $\pm$ 0,01	0.96	0.67
PLC2	1925-2014	0.49	0.599	0.30 $\pm$ 0,02	0.94	0.68
SER1	1921-2014	0.482	0.561	0.42 $\pm$ 0,01	0.93	0.38
SER2	1938-2014	0.527	0.4	0.40 $\pm$ 0,01	0.95	0.47
SAC1	1837-2014	0.432	0.468	0.33 $\pm$ 0,01	0.93	0.42
SAC2	1840-2014	0.513	0.48	0.28 $\pm$ 0,02	0.92	0.44
RRL	1890-2014	0.401	0.537	0.25 $\pm$ 0,01	0.95	0.53
SAH1	1851-2014	0.363	0.657	0.24 $\pm$ 0,02	0.93	0.22
SAH2	1832-2014	0.395	0.569	0.27 $\pm$ 0,01	0.92	0.41
SAH3	1910-2014	0.411	0.553	0.38 $\pm$ 0,02	0.92	0.27

<sup>a</sup>Localization of the distribution region of *Nothogafus macrocarpa*. <sup>b</sup>Chronology time span considering at least five trees. <sup>c</sup>Mean sensitivity. <sup>d</sup>First-order autocorrelation. <sup>e</sup>Mean correlation coefficient between all the possible combinations of tree-ring series (radii) in the chronology. <sup>f</sup>First-order autocorrelation. <sup>g</sup>Correlation analysis between residual chronologies and mean SPEI-1 index (from May to December, except for SER2, which was significant from May to November, for the common period of 1938–2014).