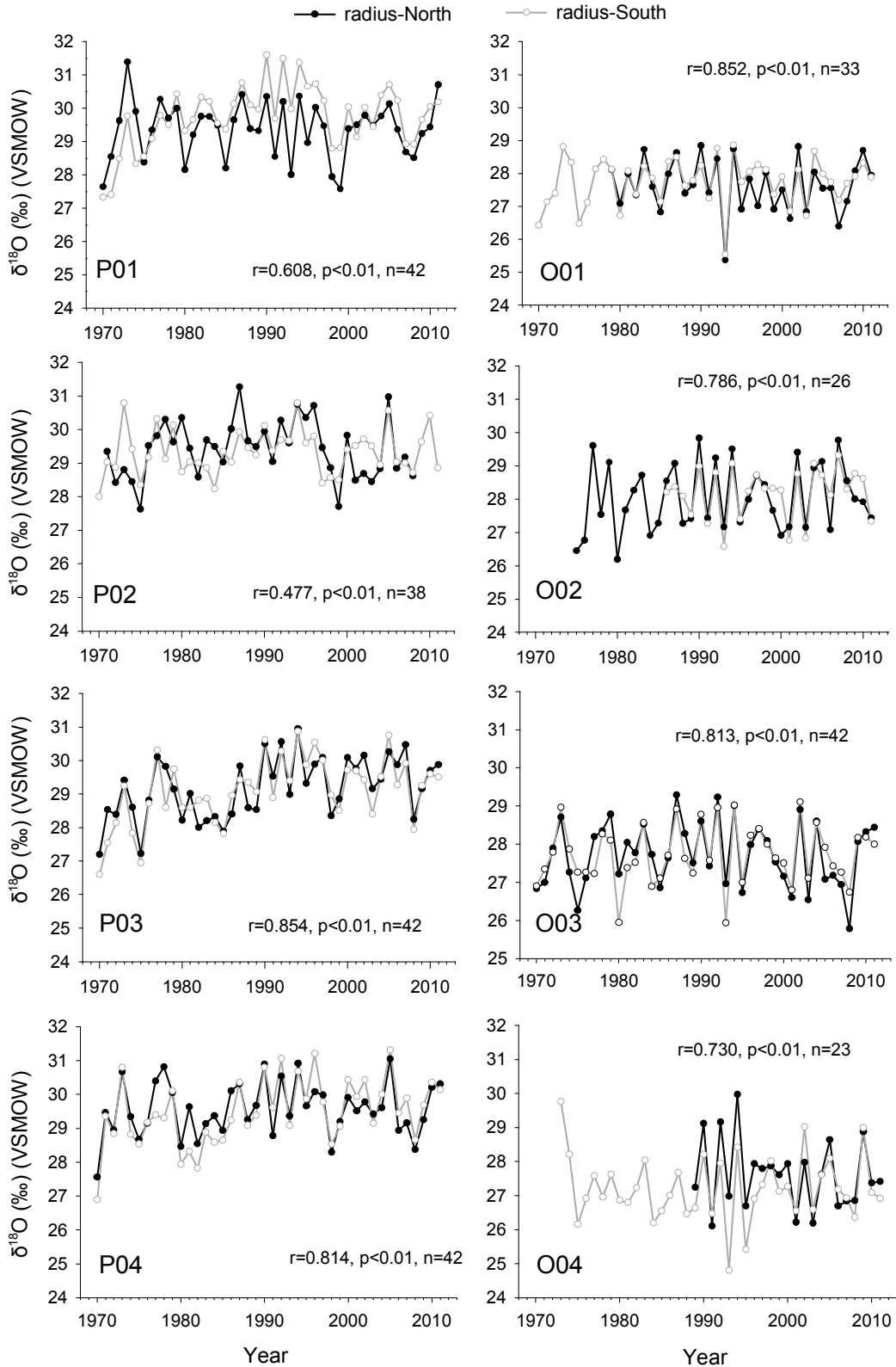
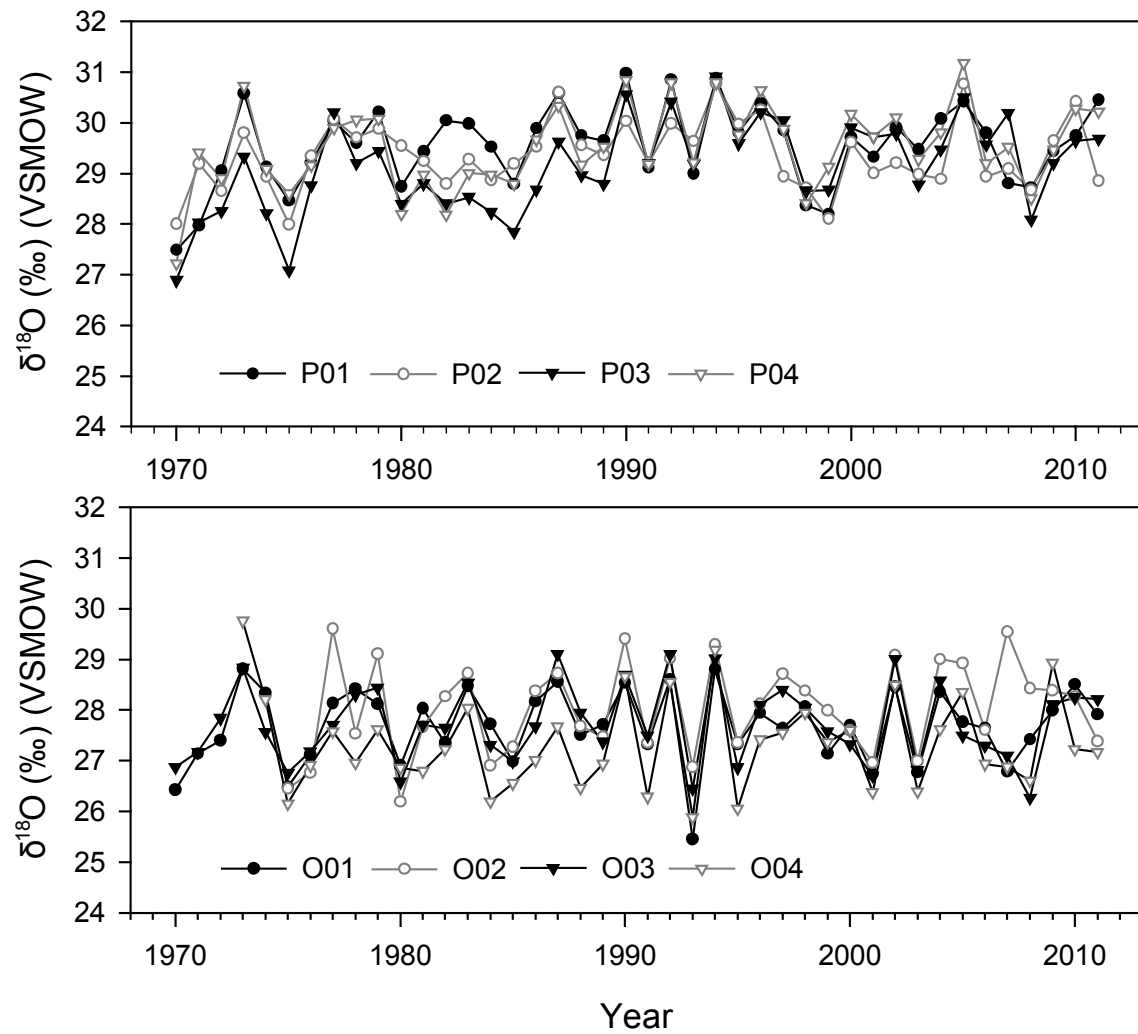


Supplementary Materials

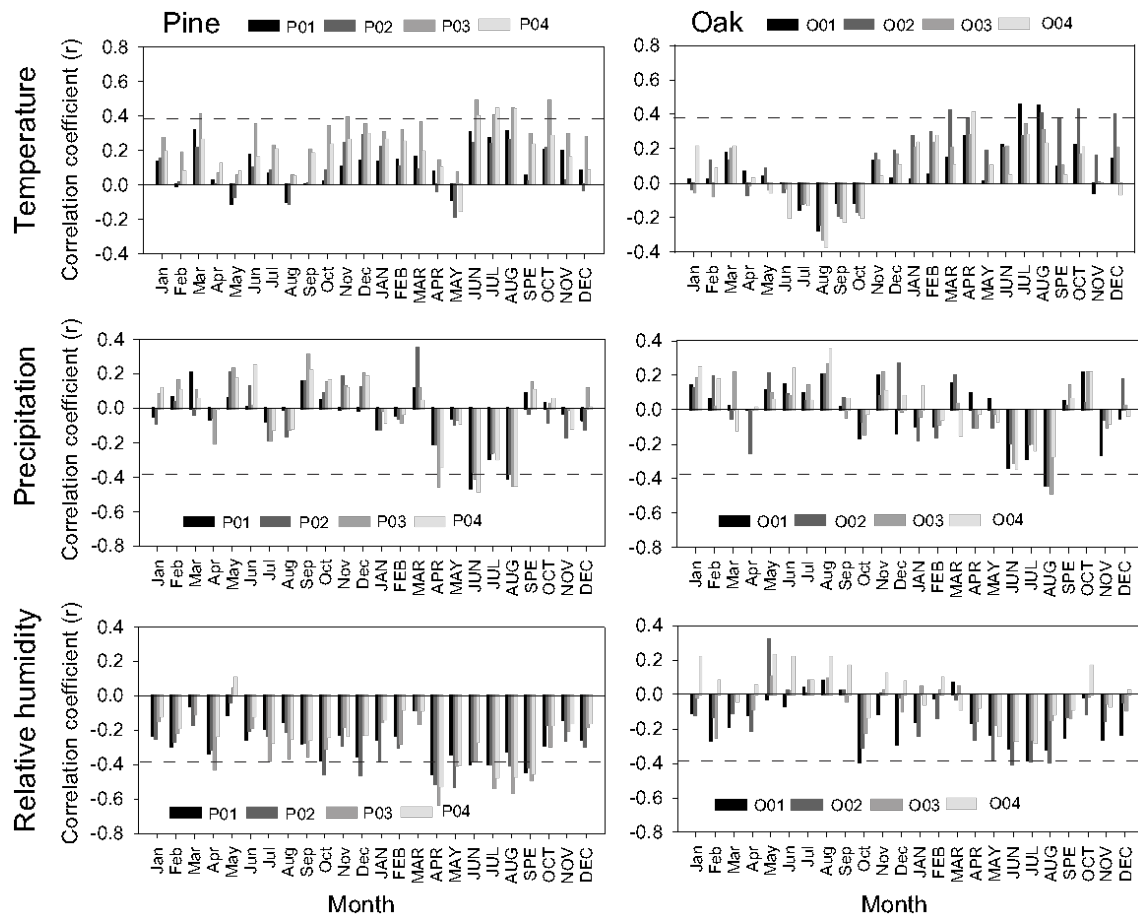
Supplementary Fig. S1. Inter-annual variation in tree-ring cellulose $\delta^{18}\text{O}$ from two different radii in each tree. The correlation coefficient and significance are reported.



Supplementary Fig. S2. Inter-annual variation in tree-ring cellulose $\delta^{18}\text{O}$ of individual pine and oak during 1970-2011



Supplementary Fig. S3. Correlation coefficients of monthly temperature, monthly precipitation, and relative humidity with $\delta^{18}O$ values of pine and oak, respectively. Correlation coefficients were calculated for individual pine trees as well as oak trees against monthly average of the climate data obtained in the current year (capital letters) and the previous year (small letters). Horizontal dotted line indicates 99% confidence level.



Supplementary Table S1. Correlation coefficients (*r*) among individual pine and oak trees

	P02	P03	P04	O01	O02	O03	O04
P01	0.697**	0.753**	0.793**	0.686**	0.519**	0.687**	0.550**
P02		0.710**	0.754**	0.493**	0.384*	0.438**	0.404*
P03			0.850**	0.465**	0.608**	0.521**	0.466**
P04				0.587**	0.521**	0.607**	0.557**
O01					0.643**	0.846**	0.740**
O02						0.661**	0.732**
O03							0.678**

** p<0.01, * p<0.05

Supplementary Table S2. Correlation coefficients between $\delta^{18}\text{O}$ values of annual tree rings in each pine and oak and the monthly mean temperature (Temp., °C), monthly precipitation (Prep., mm) and monthly mean relative humidity (RH, %) during some summer months.

	June-August Temp.	June-August Prep.	April-September RH
P01	0.366*	-0.630**	-0.507**
P02	0.307*	-0.554**	-0.565**
P03	0.548**	-0.606**	-0.653**
P04	0.536**	-0.664**	-0.558**
Pine	0.495**	-0.679**	-0.632**
	July-August Temp.	June-August Prep.	June-July RH
O01	0.513**	-0.593**	-0.416**
O02	0.376*	-0.512**	-0.474**
O03	0.365*	-0.545**	-0.314*
O04	0.291	-0.468**	-0.330*
Oak	0.430**	-0.583**	-0.437**

** p<0.01, * p<0.05