

# **Tree Rings and People**

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# Dendroclimatic potential of *Juniperus sibirica*

Ljudmila A. Gorlanova, Stepan G. Shiyatov, Rashit M. Hantemirov

gorlanova@ipae.uran.ru

Institute of Plant and Animal Ecology (Lab. of Dendrochronology), Ekaterinburg, Russia

We have examined the potential of Siberian juniper (*Juniperus sibirica* Burgsd.) ring-width chronologies for climatic reconstructions. Siberian juniper is a typical arctic-alpine shrub with a height of up to 1.0–1.5 m. This abundant species in the Polar Urals grows under the canopy of light spruce-larch forests and in the tundra beyond the tree-line. An individual juniper bush usually consists of several branches and is morphologically variable. Since branches form adventive roots, old individuals are cushion-like with a diameter of 2–3 m. Dead branches remain for centuries. The oldest living branches of Siberian juniper we found in the Polar Urals (66°48'N, 65°33'E) are 840 years old.

On the basis of ring width of living and dried-off branches of juniper a 1359-year chronology (from 641 to 1999 AD) has been developed. This chronology contains a climatic signal reflecting average temperature of May, June and July. The comparison of juniper chronology with ones for Siberian larch (*Larix sibirica* Ledeb.) and Siberian spruce (*Picea obovata* Ledeb.) growing in this area has shown that there are both similarity and distinction in a radial growth (and in the content of the climatic information) between shrubs and trees. The combined chronology for juniper and larch provides a more reliable reconstruction of the average June and July temperature than with a reconstruction based on any separate chronology.

## Editorial Keywords

climate reconstruction, ring width, temperature, *Juniperus sibirica*, *Larix sibirica*, *Picea obovata*, Polar Urals, Russia

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