



"Urban heat island" effect on tree growth at several cities of Northern Europe

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We investigated growth of larches being planted at several cities of Northern Europe: St. Petersburg (59°57'N, 30°19'E), Rovaniemi (66°30'N, 25°44'E), Apatity (67°34'N, 33°23'E). The data were collected at several sites inside of each city, and at one site in the rural area outside of each cities (about 50 km apart). Totally we studied 10 series. The longest chronology was about 190 years (in St. Petersburg). However, the most others were not very long (about 50 - 70 years). Firstly, it was shown that tree-rings of planted (not typical) larch trees don't reflect the influence of external (solar) factors in contrast with natural species. That is it could not be possible to detect some warming for the 1930-1960 period and some cooling later on. This effect was observed for both series inside the cities and outside of them. Secondly, it was revealed that for both northern cities (Apatity and Rovaniemi) variability of tree-ring indexes was more pronounced in series collected inside of them. Another situation was found for St. Petersburg. Growth of larch trees was stable inside of this megapolis. The preliminary interpretation of the results obtained seems to be connected to different influence of "urban heat island" effect on planted trees inside and outside of the cities for megapolis and relatively small towns.

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