



60 lat Zakładu Klimatologii UMK w Toruniu (1947-2007)

MIĘDZYNARODOWA KONFERENCJA NAUKOWA

pt. „Klimat ziem polskich w czasach historycznych na tle klimatu Europy”

Toruń, 11-13 października 2007 r.

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DISTRIBUTION OF NORWAY SPRUCE INCREMENT PATTERN IN THE POLISH LOWLANDS AND IN LITHUANIA

Norway spruce is one of the most important tree species in the forests of Poland and Lithuania. Increment pattern means wide and narrow tree rings similar in every year in each trees from selected research site. Such increment provide an information about environmental conditions which affected it in unrepeatably way. Main aim of this research was to analyse the distribution of spruce increment pattern in Lithuania and Poland and compare it with climatic regions in this countries. In order to do it standard dendrochronological methods were applied. Hierarchical Cluster Analysis was used to distinguish regions with similar increment pattern. To maximise the between-group variance, while minimising the within-group variance, Ward's method was used, with Pearson's correlation coefficient being used as a measure of similarity. On the basis of this five homogenous regions were established.

1. North-western Poland
2. North-eastern-Poland
3. Sites on the south from Bug river except Łochów forest district
4. Southern Lithuania with two sites from north-eastern Poland
5. Northern Lithuania

Such distribution depends on climate type which prevail on research area. In Poland from south and west to north and east, to Lithuania, increases role of continental climate. This is expressed as higher mean yearly precipitation, a decrease in the vegetation growth period, and a greater yearly temperature amplitude.

Distribution of chronologies suggest that the main role as a supra-regional factor in determining tree ring width has a climate.

Supported by Ministry grant in years 2005-2007 as a research project.