**HOW IS CLIMATE CHANGING IN FINNISH LAPLAND?**

Matti Timonen (METLA)

An exceptional mid-winter climatic warming was encountered in the timberline region in the 1990s: the monthly mean temperature for December-March increased by 5.2°C and the annual mean temperature by 0.5°C compared to the mean for the whole century. The warm period stimulated discussion about the status of the climate in Finland and launched a dendro-climatic subproject in a timberline research project being conducted at Metla.

Tree-ring analysis is a powerful tool for interpreting past and present-day climate changes. Particularly the timberline pine (Pinus sylvestris L.) has proven to be one of the most temperature sensitive forms of proxy data. The Finnish Forest Research Institute and the Universities of Helsinki and Joensuu completed a 750-year tree-ring chronology in 1998. Several joint and international projects, based on this chronology and the data related to it, have been launched since then for researching specific questions of past climate changes. This presentation is a review of the present-day climate changes in the Finnish timberline region. As an overall conclusion of several studies, it can be stated that the greenhouse effect or the other sources of global warming cannot (at least not yet) be recognized as having led to elevating temperatures or increased tree growth. Analysis of the causes highlighted a phenomenon called the North Atlantic Oscillation (NAO). It is the mean global factor controlling the Finnish timberline climate, warming in mid-winter and cooling in summer. Because of the high NAO activity, the winters of the early 1990s were exceptionally warm, but still within the range of normal climatic variation. The June-July temperatures of the past two decades were below the average for the 1900s. Since the 1970s, November has been cooler than average, and December and January of the 1980s were coolest of the entire century.

Climate change monitoring will be a doubtless an important topic also in METLA's future projects. The studies will be based on tree-rings, instrumental climate data and proxy data, and close cooperation with colleagues and laboratories abroad plays an important role.

Is the timberline climate warming? Some aspects

Finning age of the TIMO

**CLIMATIC TRENDS ON THE TIMBERLINE REGION**

**CLIMATIC TRENDS FROM TREE-RINGS**

**TIME PERSPECTIVES IN TREND TRACKING**

**A 7633-year chronology for Scots pine, Northern Finland, red line: 50-yr smoothed indices**