PLANT ECOLOGICAL RESEARCH IN POLAR AND ALPINE ENVIRONMENTS AT DEPARTMENT OF ECOLOGY, BIOGEOCHEMISTRY AND ENVIRONMENTAL PROTECTION

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Alpine and Arctic tundra have similarities and differences. Both have short growing seasons, and alpine tundra in temperate areas is subjected to severe cold winters. The vegetation of polar regions and of high mountains is very similar and consists of short-stemmed herbaceous plants, prostrate shrubs, lichens and mosses. Arctic and alpine tundra differ greatly in other factors, including among others, day length, well drained soils and lack of permafrost in many alpine regions. Therefore comparative study of alpine and Arctic tundra is interesting and very valuable.

The aim of this presentation is to show the extent of alpine and Arctic study conducted at the Department of Ecology, Biogeochemistry and Environmental Protection, University of Wrocław. The alpine study are located in the Sudety Massif and primary areas of interest include: 1. taxonomic species-based vegetation description, 2. analysis of plant communites in relation to environmental variables, 3. ecosystems and plant communities dynamics as related to global changes, 3. vegetation mapping and their comparative analysis over time, biomonitoring of trace elements as well as ecology of *Sphagnum* mosses and diversity of mountain mires. The research Arctic study, located mainly in Spitsbergen, concerns identification of the main nitrogen sources across various types of tundra vegetation, biomonitoring of terrestrial tundra ecosystems using different organisms and study of soil properties.