

ECOLOGICAL FEATURES OF PLANT COMMUNITIES OF SUPRAGLACIAL DEBRIS AND THE ROLE OF DEBRIS-COVERED GLACIERS AS REFUGIA FOR COLD-STENOTHERM SPECIES

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The number of Debris-covered glaciers (DCG) is increasing due to the climate change; such landforms are assuming a key biological role: the debris cover has a strong impact on the evolution of glaciers, reducing the rate of ice ablation, but can also allow the colonization of glaciers by many organisms. Indeed, in spite of the instability of the substrate and the severe microclimatic conditions, the supraglacial debris could provide a refuge for cold-adapted plant species.

Comparing surveys of plant species performed throughout different sites in the Alps, within the Alpine altitudinal belt, it is possible to describe the ecology and the composition of supraglacial plant communities. For this work these sites have been chosen: Peirabroc glacier (Maritime Alps, Cuneo), Amola glacier (Adamello group, Trento, Sorapiss glaciers (Dolomites, Belluno).

Data were collected performing vegetation surveys in 12 plots for each glacier on the glacier debris, each consisting of a 5*5 metres square area. Soil samples were taken in each plot to describe the main soil features influencing plant growth.

The mean number of species for glacier is six, the genus always present is *Saxifraga*. The biological spectrum consists of two components: hemicyptophytes and chamaephytes, despite the diverse specific and chorotype composition. Species are cold-adapted and require medium humidity values, low humus content and low-medium values of nutrients. The specificity of ecological requirements of these species and the different specific composition of DCGs with respect to nearby iceless landforms confirm the important role of DCG as refugia during warm period.

Biography

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