



## **Thematic mountain trails and dendrochronological fieldwork for a didactic approach related to glacier history, glacier geomorphosites and tree responses to global change**

**V. Garavaglia, M. Pelfini**

Department of Earth Sciences "A. Desio", University of Milan, Italy

(valentina.garavaglia@unimi.it / +39-0250315514)

The increasing interest in knowledge of natural themes is in Italy reflected by the increase of the offer of naturalistic trails and field itineraries for educational purposes. Glacial geomorphosites are often the new goal of high mountain hiking trails; dendrochronology and other dating methods allow the reconstruction of glacier history and also become an educational instrument for the transfer of scientific knowledge. We propose a double itinerary, with a GIS support, useful for non academic people and students to understand the high-mountain environment dynamics through geomorphological observations. Fieldwork allows to learn basic dendrochronological techniques necessary to reconstruct past geomorphologic events. A mountain trail which at the same time permits observation of geomorphological processes, of geomorphosites and their interaction with tree vegetation has great didactic valence. The understanding of the mechanisms acting on the environment is in fact favored through simple passages. Climate is the factor that causes both glacier fluctuations and tree dynamics (growth rates and colonization, again possible when glaciers withdraw) and this is clear and evident walking along the glacial and periglacial environment. Moreover, the use of GIS allows to obtain more information in a not conventional way: it is possible to create a less traditional approach to classical topics such as glaciers or to less known ones at a didactic base level such as dendrochronology or natural landscape resources. This approach promotes the diffusion of concepts strictly related to interesting and

important themes like global warming and so the concept of mountain environment protection. Future researches are needed to understand what combination of exercises and practice is most useful for students.