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Methods for soil enhancement in geoheritage research: a case study from Veglia-Devero Natural Park (Lepontine Alps)

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In mountain environments, the high variability of soil forming factors (i.e., parent material, climate, relief, organism, time) is responsible for the presence of different soil types, which not only contribute to the pedodiversity but are also a component of the local cultural heritage.

Up to now, scarce attention has been paid to the soil in the geoheritage/geoconservation scientific analyses.

To promote soil as element concurring to mountain geoheritage definition, we propose a strategy to include pedological topics within a multidisciplinary trail planned in the Veglia-Devero Natural Park (Lepontine Alps). The geomorphological dynamicity and environmental change affecting during times the small mountain catchment of Buscagna hydrographic basin are illustrated with a specific address to soil characteristics. The physical and chemical properties, and pedological features of soils reflect the interaction among the other ecosystem components (i.e. geology, geomorphology and vegetation), underlining the role of soil as natural archive for reconstructing landscape evolution and for achieving a more complete assessment of Late Quaternary geomorphic events, especially surface processes.

Geopedological researches carried out in the study area, allowed to detect 7 soil profiles as potential sites of pedological interest, located in safe and accessible places, along already existing hiking paths. The selected soil profiles not only mirror the main soil types that characterize the area but also represent evidence of past environmental conditions and geomorphic dynamics.

The opportunities for hikers and mountaineers, to observe the exposed soils along the Buscagna valley, thanks to the presence of erosional scarps and subsidence areas, allow also to get more awareness of the need of geoheritage conservation strategies addressed to soil, especially in the mountain landscape where soil characteristics reflect the striking influence of its forming factors.