

SOUTH AMERICAN GEOCRYOGENIC INVENTORY

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This report informs about the state of the art and recent advances of Geocryology in the main countries of South America with permafrost occurrence or seasonally frozen ground and where this field of research is of scientific interest. It is the aim to increase the knowledge about the areas constituting the present cryosphere, being modified by man and/or suffering changes due to climatic factors. A brief climatic analysis helps to understand the main South American periglacial areas yet fairly unknown and still lacking the corresponding cartography with periglacial geomorphology. The report also emphasizes the fact that very few data are available on altitudinal Andean permafrost degradation caused by global warming processes, which ought to be monitored for hydrological and other reasons. The main cryogenic processes observed, such as: cryometeorization, nivation, solifluction, cryoturbation and sorting with different lithologies are described and in the following some quantifications are given, such as data on solifluction movements and sedimentological methods applied to detect cryogenic phenomena. The latest data of Andean permafrost are resumed. It has recently been detected with the help of different methodologies: geophysics and/or through holes with ground temperature measurements. Some of these present permafrost sites are being monitored. The most common cryogenic forms of the Andes are presented. As to microforms patterned ground, felsenmeer, cryoturbation structures, thufurs in moors and solifluction lobes are found, and regarding characteristic macroforms of the Central Andes rock glaciers or important elements of a periglacial environment such as sedimentary cryogenic slopes, cryoplanation surfaces or asymmetrical valleys are described.