



Can topographic features of debris cones (SW Spitsbergen) be geoindicators of environmental changes?

Agnieszka LATOCHA-WITES*  and KRZYSZTOF PARZÓCH 

*Institute of Geography and Regional Development, University of Wrocław,
Pl. Uniwersytecki 1, 50-137 Wrocław, Poland*

** corresponding author <agnieszka.latocha@uwr.edu.pl>*

Abstract: Evidence of recent geomorphic processes within debris cones, their spatial distribution and diversification on cones surface are interpreted in the context of contemporary slope morphogenesis. The detailed inventory of relief features on debris cones in the SW Spitsbergen revealed their great spatial diversity. It is linked with a dominance of different morphological processes in adjacent areas. Spatial and temporal diversity of process-relief assemblages on cones is strongly related with local factors, like bedrock lithology, slope aspect and inclination, local circulation and climatic conditions. However, the potential role of debris cones and their topographic features as geoindicators archiving information about the environmental impact of global changes, cannot be explicitly estimated. Local constraints obscure the regional expression of any global trends, which could be detected on the basis of process-relief assemblages on debris cones in polar regions.

Keywords: Arctic, Svalbard, slope morphology, geomorphic processes, debris flow.

Introduction

Many recent scientific studies in the Arctic are focused on recognition and interpretation of various environmental indicators of global change (Van Steijn *et al.* 2002; Lønne 2017; Senderak *et al.* 2021; Dolnicki and Grabiec 2022).

