

TOPOGRAPHICAL EFFECTS OF SNOW DEPOSITION ON
RESTRUCTURED LAND

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ABSTRACT. The measurement of snow accumulation and distribution is one of the primary objectives of a study on the melt of snow-drifts and erosion in the phosphate mining region of south-eastern Idaho. The study area is located in an active phosphate mine and is limited to the sites of waste dumps, a product of the surface mining technique used in this area. Four sites are included in the overall study with one dump selected for intensive snow measurement. Snow deposition data have been collected for one winter season (November 1977–June 1978) on a grid pattern over this dump. The area of the study site has been expanded and similar measurements are planned for the coming snow season.

The snow measurements were made monthly on a pre-established 23 m (75 ft) square grid overlaid on the dump. The analysis of the snow data consists of contour mapping of any one or all the snow properties measured—snow depth, density, or water equivalent. In addition, since the measurements are made on the same grid each month, mathematical manipulation of grid data allows contour maps of the residual of the monthly snow properties to be plotted. A similar analysis of terrain properties collected on the same grid results in contour maps displaying ground slope, concavity–convexity of the surface, aspect, or distance from snow-deposition obstacles.

The aim of the analysis using these types of data is to arrive at a model which will compute patterns of snow accumulation and distribution on the ground surface given a description of terrain type and probable meteorological properties of the region. A preliminary comparison of the maps shows a similar pattern of snow deposition occurring each month with the exposed areas of the dump swept clean and the greatest snow depth occurring in the sheltered concavities.

SWISS AVALANCHE HAZARD MAPS

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ABSTRACT. This paper describes the various maps concerned with avalanche hazards in Switzerland and gives examples of parts of specimen maps. These include the *Wald- und Lawinenkarte der Schweiz* (1907) at 1 : 250 000 which marks actual avalanche paths, the *Karte der lawinengefährdeten Gebiete* (1972) at 1 : 300 000 which gives a summary view of avalanche hazard, the *Gefahrenkarte der Schweiz* (1975) at 1 : 100 000 which is intended to give an over-all view of all natural hazards that will influence land use, the *Lawinenatlas/Lawinenkarte Uri* (1978) at 1 : 25 000 which contains all identifiable avalanche paths in the Canton, the *Kombinierte geomorphologische Gefahrenkarte 1: 10 000 von Grindelwald* (1977), a pilot study of mapping natural hazards in a mountain area, and the *Lawinengefahrenkarten des Eidg. Institutes*