

The North American public avalanche danger scale

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The Avalanche Danger Scale is an ordinal, five-level warning system that is a cornerstone of public avalanche information. The system was developed in Europe in 1993, and introduced to North America in 1994. Although both Canada and the United States adopted the system, different descriptors of the danger levels were developed in each country. Fifteen years of practical use revealed numerous deficiencies in this danger scale, most notably a lack of clarity during low probability/high consequence avalanche conditions. In 2005, a group of Canadian and American avalanche forecasters and researchers began to revise the system, with the goal of improving clarity and developing a single standard for North America. Initial explorations to define the problem resulted in more questions and uncovered an almost complete absence of formal underpinnings for the danger scale. The magnitude of the project subsequently changed, and in 2007 the project objectives were clarified as: 1) definitions of avalanche hazard, danger and risk; 2) methodology for assessing avalanche danger; and 3) revisions to the danger scale as a public communication tool. This paper concentrates on the third and final objective, and describes the methods and results of producing the North American Public Avalanche Danger Scale. Emphasis is placed on best practice in warning system design and the principles of risk communication, which helped reshape the avalanche danger scale into a more effective communication tool. The revised danger scale will be implemented across Canada and the United States for the 2010/11 season.