Creating a Snow and Ice Hazard Impact Model

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Snow and ice can bring major disruption to society. Impacts included disruption to all forms of transport, disruption to energy and communications, damage to infrastructure and buildings and public health. In a recent study we have investigated snow and ice impacts in the UK with the aim of developing a snow and ice hazard impact model (HIM) initially focusing on the UK road network. The model will use meteorological forecasts of snow and ice (the hazard) combined with vulnerability and exposure values to give a risk forecast. The research has highlighted the complex meteorology behind snow and ice forecasting and how salting the road network can have a dramatic effect on the impacts of snow and ice, with the effectiveness very dependent on the salt staying on the roads, as it can be removed by rain or strong winds. This makes the hazard section of the impact model challenging from the start. Using case studies, an analysis has been made of the amount and rate of snow and the type of ice that have led to impacts. The analysis showed that in some areas very little is required to cause numerous impacts. The values that were found may be used as hazard impact thresholds in the model. The most appropriate vulnerability and exposure data still need to be determined, however research in this area is continuing. The snow and ice model will join existing HIMs that have been created for wind, surface water flooding and landslides as part of the Natural Hazards Partnership's (NHP) Hazard Impact Modelling Project. The aim of the HIMs is to aid decision making in the issuing of weather warnings to the public through the National Severe Weather Warning Service. The presentation will summarise the work on snow and ice that has been completed and look at ways in which a HIM could be created.