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'Understanding volcanoes and society: the key for risk mitigation'



National volcanic threat assessments as a tool to raise risk awareness and preparedness, and engage the public in regions with infrequent eruptions

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In 2005 the USGS published a national volcanic threat assessment to prioritize U.S. volcanoes for monitoring and mitigation efforts based on objective measures of volcano hazards, and exposure of people and infrastructure to those hazards. The 24-factor threat assessment system was designed to take into account the highly variable knowledge of the eruptive histories of the more than 160 active US volcanoes and to be easily understood by non-specialists. Volcanoes were ranked by their threat scores and divided into five relative threat groupings ranging from very low to very high threat. These groupings have then been used to develop a strategic road map for the USGS to address volcanic risk through research, monitoring, and hazard assessment as efficiently and effectively as possible with available resources. The results of the threat ranking are also an effective communication tool with which to engage stakeholders in discussions of hazards. Compared to other natural hazards, volcanic eruptions are often outside common experience, and the public and many public officials are surprised to learn of the impacts volcanic eruptions could have on their communities. This is particularly the case in areas such as the Cascade Range which has relatively infrequent eruptions, or when discussing a volcano that may not have erupted historically, but may nonetheless be potentially hazardous. Presenting a regional or national map of volcanoes color coded by threat helps emergency managers, elected officials, and the public to easily grasp how their local volcano compares with others in terms of hazards. People inherently understand the concept of rankings, and presentation and discussion of volcanic threat rankings can be the beginning of direct conversations and learning about volcano hazards by scientists with civil authorities, land managers, and the public. Effective communication between scientists and stakeholders is often the most critical step in effective hazard mitigation.