



## **Risk and Vulnerability from Landslide Hazards – Impacts of Geotourism in a World Heritage Site**

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Geotourism along the Dorset and East Devon Coast World Heritage Site (The Jurassic Coast) is well developed but is changing to reflect the needs of World Heritage Status and the economic needs of the area. This will include predicted changes to the number of people expected at the coast and the time of year they will be there. The 155 km coastline is affected by numerous types of instability. An initial survey has shown this to consist of 29.5 km rockfall affected, 43 km landslide affected, 19 km under cliff and 3.8 km steep unstable cliffs. Historically, in Lulworth Cove, 9 people have been hurt by a rockfall in 1957, 3 people killed and a further 3 injured in 1977; smaller incidents where individuals are struck or buried by rockfalls are not uncommon (for instance in 1992, 2002 and 2009). Landslides are a regular occurrence at Lyme Regis/Charmouth, with 17 people rescued from a mudslide in 2006 and the coastal section and cliff path regularly closed due to ongoing activity since then.

This research aims to develop a model by which the potential risks to visitors posed by different types of slope instability can be assessed and to assess the impact of proposed changes in geotourism here. It is intended that the methodology could be applied elsewhere, for instance in Thailand. Three case study sites; Lyme Regis/Charmouth, West Bay, and Lulworth Cove (including the Stair Hole) were chosen to represent the range of landforms and tourism activities that occur. Geo-tourists (and others) have been interviewed using a questionnaire to acquire information on knowledge and perception of landslide hazard. These will be integrated with assessments of slope stability and landslide occurrence and models of site occupancy. Results from 250 interviews demonstrate that: even though rockfall and landslides are considered as high risks and likely to happen, respondents believe it their own responsibility to look after their own safety, information about geological hazards such as warning signs are important and affect the decisions to engage in hazardous areas. Initial results from occupancy surveys (using archive and contemporary photography) suggest that different patterns of movement and activity may have a significant effect upon the risk posed to individuals. For instance, at Lyme Regis and West Bay, spatial and temporal occupancy is strongly controlled by the weather. At Lulworth Cove, occupancy is more strongly controlled by group activity. Current research activity will concentrate integrating the occupancy/perception model with probabilistic assessments of slope stability at the contrasting sites.