



Landslide fatalities in the Western Ghats of Kerala, India

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The Western Ghats of Kerala, India is prone to shallow landslides and consequent debris flows. An earlier study (Kuriakose et al., EG, 2009) has compiled and presented the history and chorology of landslide prone areas of the region.

An attempt to collect and compile a reliable fatal landslide inventory of the region resulted in a database of 63 landslides from 1961 to 2009. The data base was compiled from the news paper reports and research reports of the CESS and GSI. Most landslides were visited in and the locations were mapped using a handheld GPS. Date and fatality information was also collected. For twelve of the landslides accurate location information was not available and hence was plotted at the nearest known village centre. Three landslides did not have any location information but was recorded in the district gazetteer and hence included in the data base.

A total of 257 valuable lives were lost in landslides. The landslide that caused the highest number of deaths was the Amboori landslide (Thiruvananthapuram) which occurred on 11 September 2001 that caused 39 fatalities. Idukki district experienced the largest number of fatal landslides during this period, 20 events resulting in 67 fatalities. Thiruvananthapuram district experienced the highest average number of fatalities per landslide (47 deaths from 5 events). The district wise statistics from north to south are, Kannur (6 from 5), Kasargodu (24 from 6), Wayanad (36 from 6), Kozhikode (44 from 10), Malappuram (9 from 3), Palakkad (3 from 3), Thrissur (2 from 1), Kottayam (5 from 3), and Pathanamthitta (14 from 3). It was noted that there exists a spatial trend in the occurrence of fatal landslides which follows the general monsoon rainfall trends and the population density.

About 55% of the events occurred during the south west monsoon (June to September) season. It was also observed that there exists a strong upward trend in the number of fatal landslides. This upward trend can be directly attributed to the increased migration of people from the plains to the high lands in the mid 1970's and the resultant clearing of natural forests for agriculture and infrastructural development. This upward trend may continue given the population pressure and the expected increase in the frequency of prolonged high intensity rainfall events owing to the effects of climate change on the Indian Monsoon System.