EFFECT OF FLUCTUATION OF WATER TABLE ON RATE OF LAND SUBSIDENCE

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Landslide is one of the major natural hazards that Sri Lanka experiences from time to time, the most affected areas being the central highlands. Unfortunately, very little scientific study has been carried out to understand or to monitor their behaviour.

A research study has been initiated by the authors to understand the influence of the fluctuation of water table on the rate of subsidence of a landslide. An old landslide site situated at a location about 500 meters from the Nawalapitiya Railway Station and known to be settling over the last two decades was selected for this study.

The vertical settlement of some selected points in the landslide area was monitored approximately every one and half months by precise levelling of concrete markers planted for this purpose. The water table was observed weekly at three locations using stand pipes installed at those points.

The results obtained so far (seven months) show a definite increase of the rate of subsidence with the rise of the water table. The rate of subsidence during the dry season is in the range of 0.5 - 2.0 mm per month and varies from point to point along the slope. These go up to 3.0 - 10.0 mm per month during the wet season.

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