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## Recurrent landslides in Southern Western Ghats, India: A changing environmental perspective

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The Western Ghats (WG), an elevated passive continental margin along the southwestern coast of India, is the most widely populated biodiversity hot spot in the world. Monsoon climate is prevalent throughout the length of the Western Ghats. The WG region is prone to the occurrence of various hydro-climatic disasters such as extreme rainfall-driven floods and landslides. During the past 100 years, landslides and floods caused by extreme rainfall events in the WG have occurred in 1924 and 1979; but the most disastrous event, in terms of area of impact, loss of life and economic impact, occurred in August 2018. Generally, the south-west monsoon (Indian summer monsoon) occurs in the first week of June and extends up to September and the Indian Meteorological Department (IMD) predicted above-normal rainfall of 13% during the month of August 2018. But the State received an excess of 96% during the period from 1st to 30th August 2018, and 33% during the entire monsoon period till the end of August. The unprecedented heavy rains, storms, floods and associated thousands of landslides have caused exorbitant losses including 400 life losses, over 2.20 lakh people were displaced, and 20000 homes and 80 dams were damaged or destructed. This study aimed to elucidate the reasons behind the thousands of landslides caused in WG using observed and field evidences. Changes in south-west monsoon pattern and rainfall intensity played a vital role in the occurrence of landslides in WG. Further, the extensive causalities are the result of anthropogenic disturbances including landscape alterations and improper landuse practices in the hilly tracks of WG. The major causative factors for series of landslides in various segments of WG is due to hindrance of lower order streams/springs, vertical cutting, intensive quarrying, unscientific rain pits & man-made structures together with erratic rainfall triggered major and minor landslides in various segments of WG. The present investigation concludes that a scientific landuse policy and geoscientific awareness is essential to mitigate the environment.