

**Relationship between the lithological characteristics and the coastal erosion trends  
along the Southern and Southwest coastal zone of Sri Lanka**

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Coastal zone of Sri Lanka, which is defined in the Coast Conservation Act No 57 of 1981 shows a great importance as it is rich in natural resources and is the most economically productive area in the country. However, it has been experiencing numerous environmental and socioeconomic problems. Coastal erosion is one major issue affecting various coastal segments in the study area. This is more significant along the Southwest and Southern coasts. Many natural influences like climatic changes, wave energy, tidal effects etc. as well as human activities are responsible for this impact. There are places which were eroded more than 50 meters within last two to three decades. However, in some places, it is noted that even though the existing environmental and climatic conditions are very similar, there are different trends of coastal erosion. It was observed that this is mainly due to the variation of available surface materials and their physical characteristics like fracture intensity, porosity etc. Therefore, the nature of the available surface materials is one of the major factors that determine the rate of coastal erosion in the study area. Mainly there are eight different types of surface materials that can be identified along the South and Southwest coastal zone of Sri Lanka. They are hard rocks, moderately weathered rocks, weathered overburden, limestone, beach rock, laterite, coastal deposits and protection structures. They were ranked according to their influence on coastal erosion and according to their physical characteristics like porosity, fracture intensity etc, another ranking system was introduced. After analysing these ranking systems using spatial technology i.e. Geographical Information Systems (GIS), the study area was divided into different coastal segments based on resistance to coastal erosion.

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