Analysis of Sediment Accumulation and Decumulation Pattern by Means of Bathymetric Surveys: A Case Study in Beruwala Fishery Harbour

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Hydrography is one of the main branches of surveying. In the modern world, the hydrography field plays a major role in safe navigation purposes and seafloor mapping. Bathymetry survey is the science of identifying and preparing charts about the behaviour of the ocean's floor. Also, bathymetric data provides an important foundation for the process of generating profiles of the seafloor, charts for safe navigation, coastal area erosion/accretion, sea-level variations, and so on. Due to the waves and currents, the sediments are transporting along the seabed and the seafloor may differ continuously. Therefore, hydrographers should collect hydrographic data for safe navigation purposes and other oceanographic requirements. The present study mainly focused on sediment accumulation and decumulation patterns utilizing bathymetric surveys in the Beruwala fishery harbour. The bathymetric data were collected by using a single beam echo-sounder in February 2012, September 2013, August 2017, and February 2019. Further, sand volumes were calculated by time series of bathymetric data using ArcGIS software with several tools (IDW, etc.) and results shows that sand accumulation is evident in February 2012 and February 2019. Further, sand decumulation is obvious in September 2013 and August 2017. Based on the obtained results, sand accumulation inside the harbour is evident during the northeast monsoon season and sand decumulation is evident during southwest monsoon season. So, this information is important for the maintenance of the harbour basin.

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