

**OBSERVATIONS ON GEOMORPHOLOGY, TRANSPORTATION AND DISTRIBUTION OF SEDIMENTS
IN WESTERN AND SOUTHERN SRI LANKA AND ITS CONTINENTAL
SHELF AND SLOPE REGIONS.**

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The geomorphology, drainage systems and predominant lithologies of western and southern Sri Lanka are briefly described as a background for sediment transportation into the western Indian Ocean.

Bathymetric surveys carried out over the continental margin of Sri Lanka during the past five years are reviewed and a composite bathymetric map correlating and interpreting the survey results is presented. It reveals a narrow continental shelf ranging from 2.5 to 23 km in width with a wider area in the SSW; the shelf break occurs at depths ranging from 30 to 90 m. Submarine canyons, valleys and gullies are common, some of which are seaward continuations of land valleys and some prolonged land fault trends. Many continue down the continental slope, dividing into "tributaries". Large submarine canyons (Panadura and Dondra canyons) incising the continental shelf and slope are confined to the areas of shallow basement rock, opposite on-shore areas of Precambrian rocks. Areas of Tertiary basin development both onshore and offshore, lack the development of major submarine canyons on adjacent continental shelves and slopes.

Hydrological data indicate that over 24,184 million m³ of surface water runoff annually discharges into the sea through the perennial streams of the western and southern coast of Sri Lanka. A high proportion of the study area exposes Precambrian metamorphic rocks but a few river basins drain areas of carbonate rocks; preliminary work suggests that the rivers draining metamorphic rocks contribute appreciable loads into the western Indian Ocean.

Overall marine net sediment transport is northwards by the longshore currents and predominant WSW-ENE directed waves, but investigations in progress indicate that the submarine canyons provide avenues for cross-shelf and down-slope movement of sediments.