

Deducing sediment transport direction and the relative importance of rivers on a tropical microtidal beach using the "McLaren model"

Abstract

Analyses of the sedimentological trend from 90 samples collected at 1-km intervals along a tropical microtidal coastline of northern Tereng-ganu indicate that the preferred sediment transport direction was northwards, following the McLaren model. The extent of disruption to and reestablishment of the sedimentological trend on beaches north of two river mouths within the study area was used to determine their relative importance in supplying sediment to the beaches. The extent of disruption to the sedimentological trend was 18 and 14 km for the beaches north of the Terengganu and Setiu River mouths, respectively. This suggests that the Terengganu River is more important in supplying sediments to the beach than the Setiu River. To a limited extent this study showed that the McLaren model can be applied to deduce sediment transport direction on a microtidal coastline, while disruption to the sedimentological trend adjacent to river mouths can be used to compare the relative importance of rivers in supplying sediments, provided that the disruption to the sedimentological trend is small enough so as to allow for the trend to be discernible again further along the transport path.