

# Seasonal shoreline oscillation of Tamil Nadu coast

The boundary between land and sea constitutes the shoreline. Beaches are accumulation of sediment deposited by waves and currents in the shore zone. Beach systems are dynamic interactions between shore processes and coastal sedimentation. The changes taking place in the coastal processes due to the construction of groin, jetty and harbour were brought out by Bakker<sup>1</sup>, Komar *et al.*<sup>2</sup> and Narasimha Rao<sup>3</sup>. An understanding of these interactions is a necessary prelude to beach management.

Berm crest data, spread over 22 locations along the Tamil Nadu Coast, over a decade starting from 1979 to 1988, form the basis of this study

(Figure 1) The monthly shoreline oscillation pattern for each site is shown in Figure 2

Critical examination of Figure 2 depicts that erosion is moderate between June and July. Since October to December is the period of frequent cyclones and depressions in the Bay of Bengal, severe erosion is observed at that time. The shoreline gradually restores during January and March, due to the prevailing calm wave conditions. The stations located on the north of any manmade structure show an erosion pattern and vice versa for the stations south of it, as observed in Mahabalipuram, Tharangambadi and Nagapattinam. Simi-

larly, due to the harbour activities at Madras, Foreshore Estate is accreting with a complementary erosion at Royapuram.

A close similarity in the accretion pattern for sites located in the Palk Strait, viz. Ammapattinam, Mandapam and Rameswaram, is observed. The region is relatively a sheltered area with respect to waves and currents, which favours deposition. Monthly shoreline oscillation at Thiruchendur, Manapad and Uvari, situated on the southern part of Tamil Nadu Coast, shows severe erosion in June. Alternate erosion and accretion trend noticed at Kanyakumari is worth mentioning here

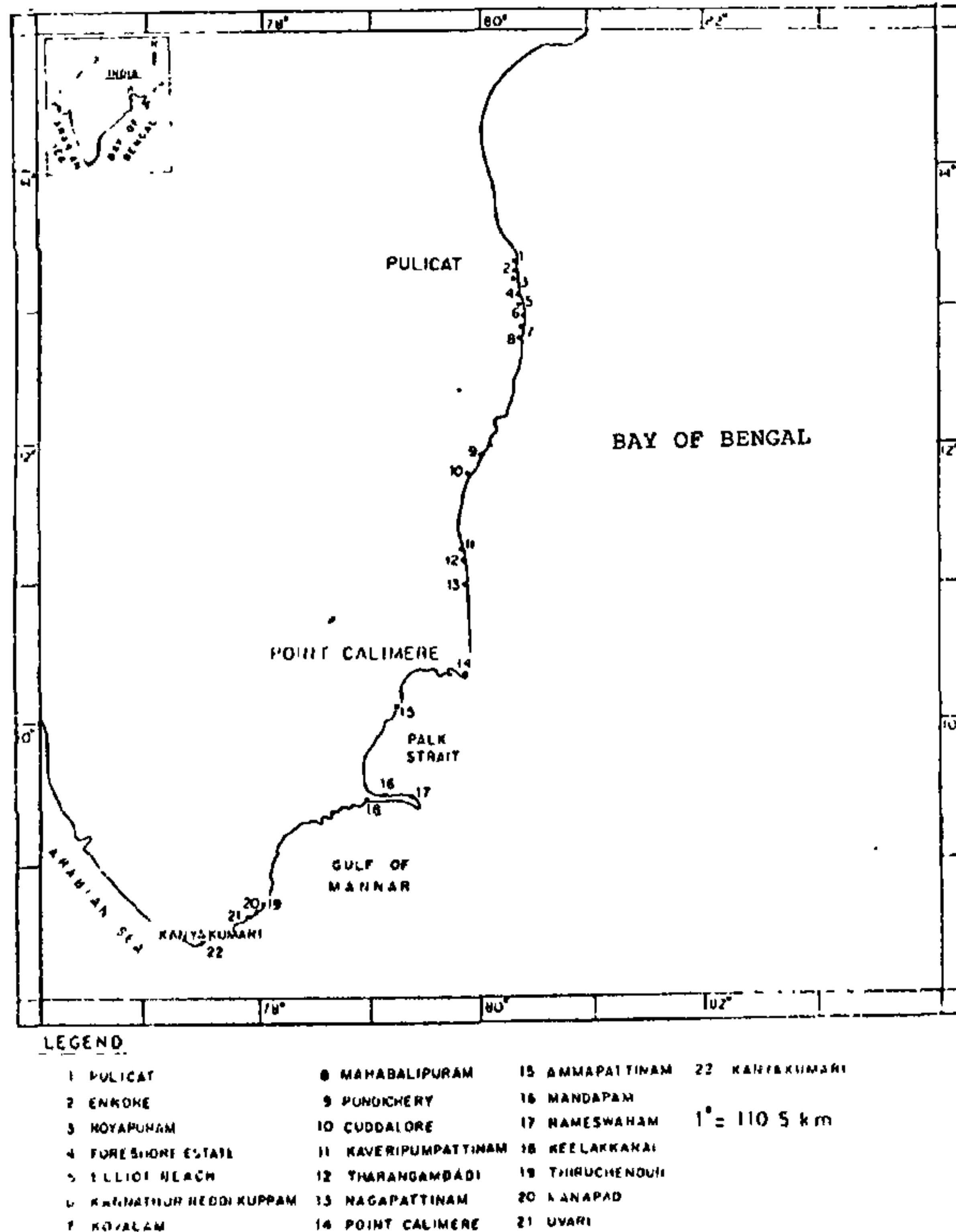


Figure 1. Location map.

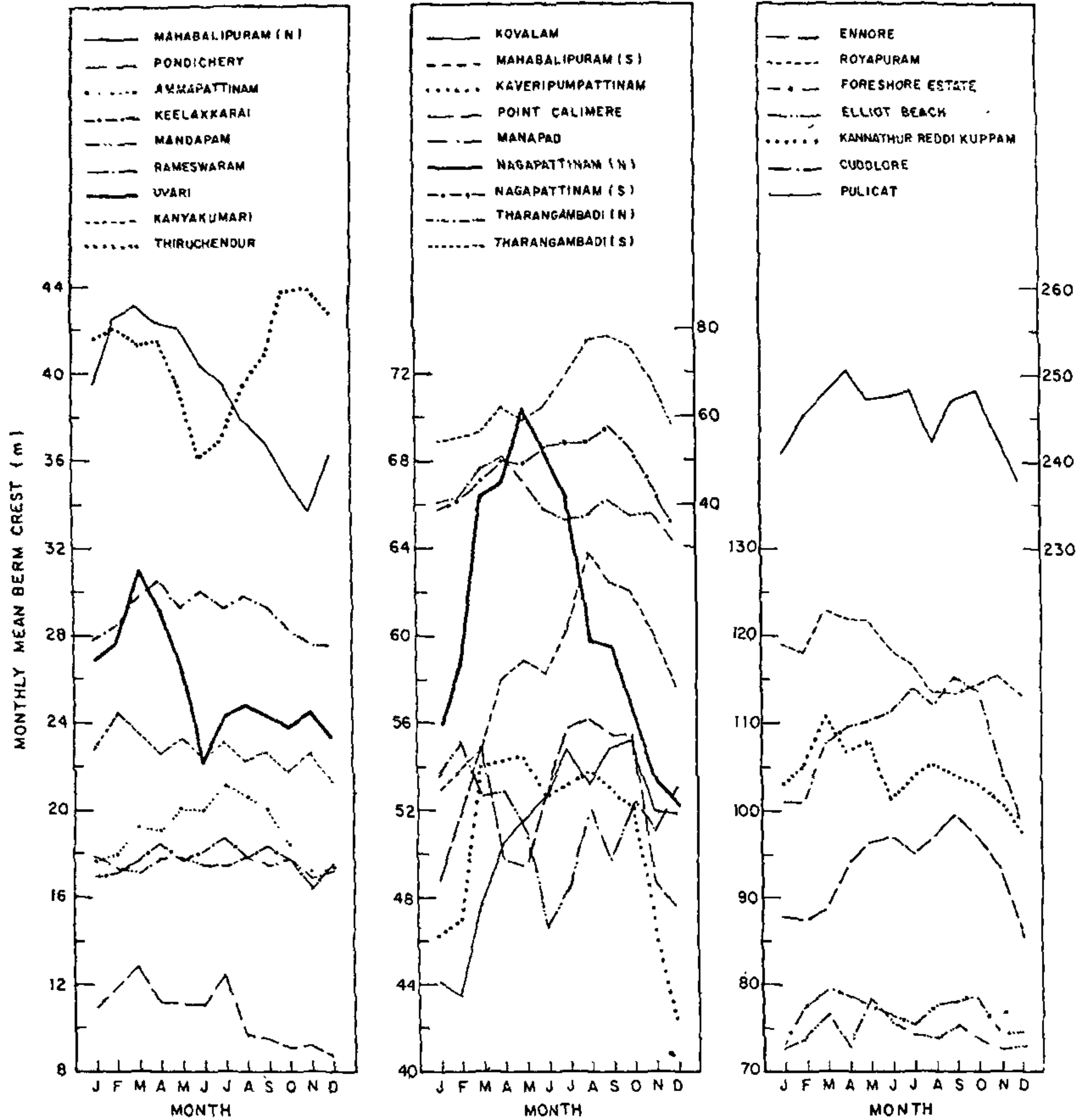


Figure 2. Mean monthly shoreline oscillation.

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2. Komar, P. D., Lizarranga-Arciniega, J. R. and Terich, T. A., *J. of Waterways, Harbours and Coastal Engg. Div.*, 1976, 102, 13-30.
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