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CASPIAN RAPID SEA LEVEL CHANGING IMPACT ON RIVERS MOUTH MORPHODYNAMIC

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Key Words: Caspian, River, sediment, morphodynamic, fluctuation, mouth

Abstract

Configuration of river mouth and morphodynamic structures figures in the estuary area were associated to sedimentary depositional processes and hydrodynamic of sea and hydraulic of river[1]. The protection and remediation of rivers in the coastal zone against to erosion and destructing events and preventing of environmental disturbances development on there have required enough understanding on natural condition of marine forces (waves, currents, storms) and river discharge amount[2]. In this paper, the evaluating of sedimentary – morphodynamic deformation of main mouth of rivers in the southern coasts of the Caspian Sea is the vital target. At the beginning the main rivers of study area have been studied from the amount of discharge of water and sediments to Caspian Sea and then eight rivers were selected in the southern coasts of the Caspian Sea (fig 1). They are covering all part of study area from East to West ward. In the second stage, with field survey monitoring and sediments sampling, all sedimentary – morphodynamic formation of beach zone and estuary of rivers were measured. After that the estuary shape of main rivers of the Caspian Sea and river mouth deformation have been comparing with use periodic satellite images associated to last Caspian sea level rise during 1983 till 2004. The results of Satellite images periodic comparing show that the last sea level arises as 2.5 meter elevation from 1984 till 2005 could be change the estuary condition and mouth of rivers shape in the study area. There are different type of river mouth in the study area and the last sea level arise has caused morphodynamic deformation (trait inclination of rivers, inflation of mouth and it's widen) on the beach zone and the rivers mouth condition.

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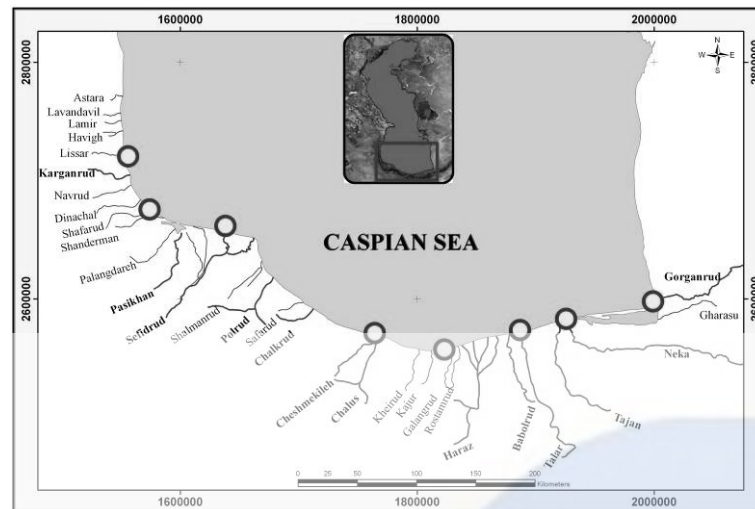


Fig. 1) Selected Rivers of study area

Conclusion

Therefore as final conclusion we understand that sediments size distribution and morphodynamic formation is a good indicator for estuary classification in the study area. Also rapid sea level changing of Caspian Sea has a direct influence on rivers mouth deformation and the tendency of changeable events associated to estuary depend on sea and river forces and type of beach zone from geometry of beach structure point of view. Finally on the basis of morphodynamic index, the river mouth of southern coasts of the Caspian Sea have been breakdown to erosion (Nashtaroud River), accretion (Gorganroud, Sefidroud, Shafaroud and lissar rivers) and transition (Sorkhroud, Larim, Nekaroud Rivers).

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