

Underwater Topography in the Area of Tamsui Estuary

Gwo-Shyh Song¹, Liang-Saw Wen^{1,2}, Kon-Kee Liu^{1,2}, and Pai-Kuan Liu¹

ABSTRACT

In the final bathymetrical map, it gives different bottom looks in the southern and northern segment, respectively, of the Tamsui Estuary. The transit of two segments is at the midst of riverbank by the Honshulin Reserved Territory located north of the Chuwei town. In the southern segment, riverbank shapes like a canyon with bottom depths around 13-15 meters; along the course line, it exists a convex high like a saddle in the region close to the Quandao Bridge. In the transit region, the river becomes wider, the flow thus slows down, siltation occurs such that riverbed tends to be shallower in depths. In the northern segment, river begins to bend such that the talweg, averaged at 8 meters deep, is found inside the outer bank of river. Since 80 years ago, the Tamsui River has been bifurcated (except in its river mouth) with a series of shoals lying on the middle of river or the inner side of riverbank, implying the hydrodynamic has been dominated by the fluvial flow and the tidal flow at least in last decades. By the construction of water dams in the up streams, fluvial flow can only carried small amount of sediments in recent years. Paleo-sediments have been sorted and carried upstream by the flood tidal flow in the dry season, then removed and directed into the ocean occasionally in the flood events. They have been deposited on the seabed shallower than 7 meters deep in the shoal area north to the North Harbor Bank of the Taipei Harbor. Eventually, the shoal, the crescent shoal, and the bifurcated channel have been gradually faded on the riverbed.

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1. Institute of Oceanography, National Taiwan University

2. Center for Ocean Science Research, National Science Council