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Sediment Transport and Control of Keelung River – From Watershed Management Aspect

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Keelung River flows through mountainous area across New Taipei City and Taipei City. The total length is more than 60km. The average rainfall in this watershed ranges from 2000 mm to 5000 mm (1971∼2011). Landslide and erosion occurred with heavy rainfall and typhoon events, which is 3∼4 in average per year. Flooding occurred in Hsichih area with heavy rainfall and high tide. In order to control flooding, three major engineering control projects were held before 1998 to 2005. The engineering control methods including reshape of river line, normal embankment and ecological embankment, and a new constructed flow path in order to let overflow flood passes through tunnel to another watershed directly to the sea. The section profile of river depth was measured every year since 1960s. This data provides high quality for sediment transportation. Remote sensed data was adopted to digitize land use condition along the river to discuss temporal existence of flood lands, landslides, and green coverage, which including trees and grass lands. The discussion of erosion-deposition relationship in each convergence of river, major engineering treatments is discussed in this research. Moreover, the contribution of land usage change, green coverage and landslide to sediment is discussed and hopefully can provide suggestions to engineering control method and watershed management.