

A NUMERICAL TIDAL MODEL OF MUSI-UPANG ESTUARIES

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ABSTRACT

A real time numerical model is developed to simulate tidal flow in the interconnected Musi-Upang estuaries, South Sumatra, Indonesia. The model adopted the existing code for solving two dimensional shallow water wave equations. The code utilized an explicit finite difference scheme. The external inputs to the model are the ocean tide and upstream current velocity. The computed tide and water discharge show a very good agreement with the field measurement. A more general upstream boundary condition is devised to equip the model with predictive ability. With the new upstream boundary condition the model needs only the ocean tide as its external input. The model then is applied to predict the effects of proposed dams in the Upang river.