Study of Sediment Dispersion Using the THAICHOTE Satellite during Thailand's 2011 Flood Disaster.

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Abstract

Weather changes have had impacts on Thailand, causing floods over many areas in the lower Northern Region and the Central Region of Thailand from September to December of 2011. Aside from causing tremendous losses to the lives and properties of people, the floods also had tremendous impact on resources and the environment from enormous amounts of water inundating the Central Region via the three main rivers, i.e. the Chao Phraya River, the Nakornchaisri River and the Bang Pakong River flow into the Gulf of Thailand. THAICHOTE satellite images were used to benefit impact management or announcements to prepare for impacts causing potential damages. This research was conducted to study the dispersion of suspended sediment by using data from THAICHOTE satellite images and studying the characteristics of changes occurring in water quality.

According to the findings, the flow direction of water moving sediment in the upper Gulf of Thailand during 31 October – 2 December 2011 was found to be strongest in moving water and sediment on 31 October 2011 and the sediment direction had an average movement from the mouth of the Chao Phraya River flow into the Gulf of Thailand for a distance of approximately fifteen kilometers. And when the mass of water moved toward the Gulf of Thailand, the water containing sediment moved to the southeast along the coastlines of Samutsakorn, Samutsongkram and Phetchaburi. The seawater quality remained compliant with seawater standards, except for salinity, which was 0.3-22.3 parts to a thousand parts. The river mouth area and nearby areas can be considered than usual and had changes in chlorophyll A at 10-25 milligrams per cubic meter. The changes had impacts on creatures which were unable to adapt, e.g. shelled marine animals and small marine animals which move slowly and cannot stand immediate changes.

Keywords: sediment, flood, THAICHOTE