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ABSTRACTS SUBMISSION FORM

Abstract

MONITORING OF CORAL REEFS AT TAO ISLAND, GULF OF THAILAND: APPLICATIONS OF REMOTE SENSING AND FIELD SURVEY

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Tao Island is located approximately 70 km, east of Surat Thani Province in the South of Thailand. It is one of the most popular tourist destinations for decades, especially for snorkeling and SCUBA diving. It is necessary to have monitoring programs for providing information on the diversity and condition of particular sites as well as environmental changes for sustainable tourism management. Recently remote sensing is important alternative technology that can supply the data necessary to monitor coral reefs on a large scale in a cost and time effective manner. The present study aims to use remote sensing and GIS techniques together with field observation to survey and monitor changes of coral reef conditions around Tao Island, Gulf of Thailand, especially at the diving sites. Remote sensing techniques of Landsat-5 TM and Landsat-7 ETM+ have potential to provide large-scale monitoring data in coral reefs. Time series of Landsat-5 TM and Landsat-7 ETM+ images were analyzed to detect changes in coral reef conditions. Several corrections were undertaken to gain more accuracy. The results were compared with direct field observations. The impacts of severe coral reef bleaching event during 1998 on coral reef conditions were remarkably observed. Coral reef recovery was gradually detected. It also showed the possibility of a cost-effective way to study in a relatively large and remote coral reef area. Future development of remote sensing techniques to study coral reef community structure and health of reef organisms and availability of various satellite images are required.

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