

## **Sustainable Development Planning of Wetlands in Kuala Terengganu District Using Satellite Imagery**

### **ABSTRACT**

Wetland cover mapping is very important in the sustainable planning, identifying its areal extent and the rate of change over time. This study aims to map the areal extent and its rate of change in Kuala Terengganu district for its future sustainable development. Three LandsatTM images, which dated on 15th October 1998, 14th July 2002 and 15th August 2005 were used in digital image processing by using a RGB band combination of 4, 5, and 2. The overall classification accuracies for the 1998, 2002 and 2005 images were 74.55, 82.42 and 90.91 percent, respectively. The United State Geology Survey (USGS) Classification Scheme was used to determine the wetland and the images were independently classified and total areas of wetland cover were compared between different dates of imageries. Surprisingly, there was an unexpected significant increase (from 102.35 to 381.35 ha) in the areal extent of wetlands in a seven year period of 1998 to 2005 with a rate of change of 0.84% increase per year. This study implies that the integration of remote sensing and Geographical Information System (GIS) may provide a useful tool for temporal studies in wetland cover and its rate of change in Kuala Trengganu district.

**Keyword:** Wetland, Remote sensing, Rate of change, Setiu