Analysis of hotspot pattern distribution at Sabah, Malaysia for forest fire management

ABSTRACT

Forest fire is a major threat to tropical forest ecosystem and can be detected as hotspots using satellite technology. Its pattern and distribution can be used to identify areas where there are occurrence of forest fire. This study aims to assess and investigate the hotspots pattern in Sabah during 2006-2010. This study was conducted in Sabah, located in the northern part of Borneo Island. Hotspots data were obtained from Fire Information for Resources Management System (FRIMS). Hotspots data for 5 years (2006-2010) in longitude 114°E, 3.58°N and latitude 119°E, 7.22°N) were analysed using ArcMap 10.1 software. Descriptive statistics analysis was done using Microsoft Excel. Results showed that total number of hotspots observed annually were 382 in 2006, 572 in 2007, 294 in 2008, 554 in 2009 and 1082 in 2010. On monthly basis, the highest numbers of hotspots detected were in March, 2010 with 445 hotspots while January, 2009 was the lowest with no hotspot detected. Distribution by region showed the Interior region recorded the highest number of hotspots in 2010 with 594 hotspots, followed by Sandakan (697), West Coast South (475), North West Coast (327) and Tawau (226), respectively. In conclusion, the hotspots detected varied according to year, months and regions. Understanding hotspots patterns enables the allocation of resources for forest fire planning and management.

Keyword: Forest fires; Tropical forest; Northern borneo; Haze