

IDENTIFICATION OF INUNDATED AREA USING NORMALIZED DIFFERENCE WATER INDEX (NDWI) ON LOWLAND REGION OF JAVA ISLAND

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ABSTRACT

Flood disaster is a major issues due to they occur frequently in moonson season on several area of Indonesia. Delineation the extent of inundated area caused by flood is needed fastly as important spatial information to support disaster emergency response. This research explains the identification methods of inundated area using NDWI from Landsat TM/ETM⁺ on lowland regions of Java Island. A pair of the data were chosen for acquisition date on before and during flood in each observation area. Observation area were selected in several location of lowland regions of Java Island where have occured great event of flood during last decades. We applied the change detection methods of NDWI. The thresholds values of NDWI change was used to separate the flood and non flood areas. The results show that extent of inundated area caused by flood on lowland regions can be identified and separated based on NDWI variables extracted from Landsat TM/ETM⁺.

Keywords: inundated area, NDWI, Landsat, lowland region, Java Island