Mapping of Fire Detection Using Visible Infrared Imaging Radiometer Suite Satellite Imagery to Reduce the Risk of Environmental Damage

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Abstract

The frequency of fires increases and triggers environmental damage, so it needs detection to minimize negative impacts.Fire detection using S-NPP VIIRS satellite imagery. Based on the background, research was conducted with the title "Mapping of Fire Detection Using Visible Infrared Imaging Radiometer Suite Satellite Imagery to Reduce the Risk of Environmental Damage".

Research in Banjarbaru City, South Kalimantan Province. Hotspot data from S-NPP VIIRS satellite image recording in 2012-2021. Data analysis is descriptive qualitative (describes the distribution of hotspots) and quantitatively (maps the frequency and distribution of hotspots) as the first step in detecting fires to reduce the risk of environmental damage. The risk of environmental damage is known using a questionnaire.

The results of the study revealed that the highest number of hotspots and nominal and high confidence levels were in September (1370) and October (1050). The greater the number of hotspots with a nominal confidence level and high the potential for fires and environmental damage the higher. Environmental damage in the study area is quite high (>75%). Research findings show that fire detection results can be used as a strategy to reduce the risk of environmental damage and minimize negative impacts.

Keywords: mapping; fire detection; S-NPP VIIRS; environmental damage.