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## Geographic Information Database Platform to Support Decision Making on Forest Fire Extinguishing in Wildlife Sanctuary Thailand

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### **ABSTRACT**

Forest fires are an important problem for humanity that must be urgently addressed. Most forest fires in Thailand are caused by accidental or unintentional human activity. During the dry season each year, forest fires spread regularly, causing damage to natural resources, wildlife, the environment, economy, and the quality of life of the population. It has been observed that mistakes in planning to suppress forest fires occur frequently, leading to the loss of lives of officers almost every year. This is partly due to the lack of important information for planning and managing areas affected by forest fires, as well as the absence of a spatial visualization platform that can aid in effective management of forest fire areas. For this reason, the research team aims to develop a platform to support decision-making in extinguishing forest fires and to aid in planning to prevent their spread. With the development of a spatial database, including hotspot data obtained from MODIS and VIIRS satellites, the platform can retrieve such data in real-time. Background images from Sentinel-2 satellite data can be utilized to analyze areas at risk of forest fires and assess areas damaged by forest fires. The test results of the developed platform in Thailand revealed that it could support decision-making by authorities in planning forest fire extinguishing operations effectively. In 2024, the number of hotspots decreased by 79.85% from the previous year, and the display platform can also support the display and processing of spatial data layers in various aspects that will be added in the future

**Keywords:** Forest Fire, Wildfire, Hotspot, Platform.