FLOOD SUSCEPTIBILITY MAP IN KEDAH

USING SUPERMAP IDEKSTOP & ARCGIS PRO SOFTWARE

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ABSTRACT

Flood Susceptibility Map in Kedah
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Flood susceptibility mapping is a vital tool for enhancing flood risk management, real-time forecasting, and land use planning. By accurately identifying and classifying flood-prone areas, these maps support informed decision-making, helping to mitigate the impacts of flooding on communities. The importance of this flood susceptibility is to determine the area in Kedah which have the highest, moderate, low and very low flood susceptible area. This project aims to generate map of flood susceptibility for Kedah, Malaysia. Digital Elevation Model (DEM), Landsat 4-5 TM C2 L1, rainfall, flood marks and base map of Kedah are the data used for this project. All of these data were projected into Kertau RSO Malaya Meters projection. All the data will be added into the weighted overlay analysis to produce the flood susceptibility map of Kedah. The final results of this project show the area of flood susceptible using flood parameters in spatial based and produce the flood susceptibility map that have a different level of risk which is high, moderate, low and very low. In conclusion, the flood susceptibility map in Kedah can helps the local citizens and minister to determine which area in Kedah that have the high risk of flood susceptible area and helps to make a land use planning to prevent flooding problems in the future.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

Flood susceptibility mapping is a vital tool for enhancing flood risk management, real-time forecasting, and land use planning. By accurately identifying and classifying flood-prone areas, these maps support informed decision-making, helping to mitigate the impacts of flooding on communities. Additionally, addressing the health risks associated with flooding, such as power and water supply disruptions and waterborne disease outbreaks, is critical for protecting public health and ensuring community resilience in the face of flooding events.

Flood susceptibility mapping and assessment is an important component of flood prevention and mitigation strategies (Vojtek & Vojteková, 2019). It involves analyzing physical features such as land-use and rainfall patterns to identify areas most vulnerable to flooding. There are several studies that applied flood parameters for studies on the flood susceptibility mapping such as slope, land use, rainfall, elevation, topographic wetness index (TWI), and flow accumulation(Shafizadeh-Moghadam et al. (2018). The impact of flood during year of 2021 at Kedah, Malaysia is stated as the worse conditions of 879 families equal of 4,395 people (Figure 1.1).