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# Poster Book

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# CONTENTS

# Mangrove Normalized Difference Vegetation Index (NDVI) Method For Mapping Mangrove Forest In Kilim Geoforest Park Langkawi

## INTRODUCTION

Mangrove forests are present in the intertidal zone, located within small groups of trees and shrubs in the harsh interface between sea and land.

In Malaysia, the overall mangrove distribution was recorded as only 18 in the peninsular region.

From Langkawi's total area of 47 837 ha, Kilim's mangrove forest occupies 8 261 ha.

## PROBLEM STATEMENT

Due to the land use land cover ( factor, the surrounding mangrove is in risk A boat carrying tourist at a high speed is to fault for causing the water in spread the area of the mangrove forest.

Mangrove forest habitats must therefore always be protected due to their enormous impact on ecological, biophysical, and socioeconomic factors.

## OBJECTIVES

To classify the land use land cover at Kilim Geoforest Park, Langkawi.

To determine the healthiness of mangrove forest using vegetation indices.

To examine the changing of land use land cover and healthiness of mangrove forests using matrix method.
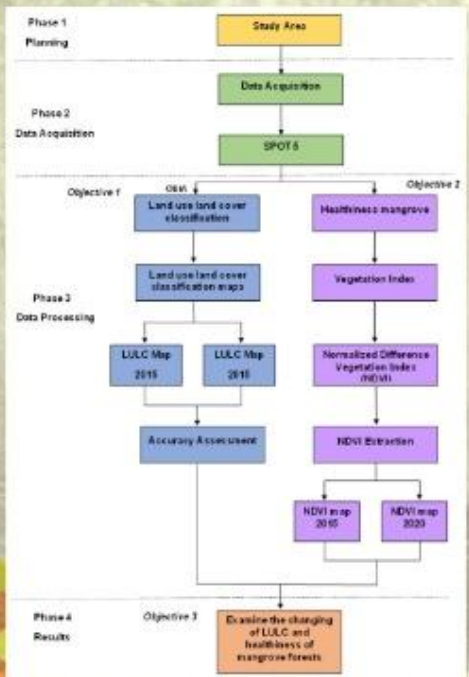
## NOVELTY

To produce a land use and land cover map and a mangrove tree health map in Langkawi.

To find out the threat of mangrove trees in Geoforest Park Langkawi.

## CONCLUSION

LULC powerful tool to assess the amount of loss and gain, characteristics, and pattern of land cover of a region over time.

NDVI is classified to have high accuracy in mapping mangrove in an area.

## RECOGNITIONS

Faruque , M. J., Hasan, M. Y., Islam, K. Z., Young, B., Ahmed, M. T., Monir, M. U., Shovon, S. M., Kakon , J. F., & Kundu, P. (2022). Monitoring of land use and land cover changes by using remote sensing and GIS techniques at human induced mangrove forests areas in Bangladesh. Remote Sensing Applications: Society and Environment , 25 . https://doi.org/10.1016/j.rsase.2022.100699

Mokhtar, E. S., Majid, M. A. A. A., Norman, M., Roslani , M. A., Nasirun , N., & Mohammad, Z. (2022). Mangrove Area Delineation using Object Based Classification on Sentinel 2 Imagery: Tuba Island, Langkawi. IOP Conference Series: Earth and Environmental Science , 1019 (1). https://doi.org/10.1088/1755-1315/1019/1/012019

## METHODOLOGY



## FINDINGS

| Criteria | | C | D | NDVI |
|---|---|---|---|---|
| Good | Dense | ≥ 75 | >1500 | 0,43 ≤ NDVI ≤1,00 |
| | Moderate | ≥ 50 – < 75 | ≥ 1000 – < 1500 | 0,33 ≤ NDVI ≤0,42 |
| Broken | Rare | < 50 | <1000 | -1,0 ≤ NDVI ≤ 0,32 |

Notes: C = Cover (%), D = Density (Tree/ha), NDVI = Normalized Difference vegetation Index





## COMMERCIALIZATION



Dead Leaf    Stressed Leaf    Healthy Leaf
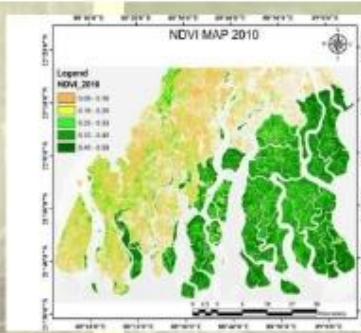
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