

# Mapathon

**Topic:** Desert Locust Nesting Location

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**Study area:** Rajasthan

## Introduction

The breeding period of desert locusts in India ranges from July to October. Locusts generally lay eggs in sandy and wet soils in large open grounds.

## Data

SWI maps from MOSDAC for July to October 2020 [17<sup>th</sup> July 20, 20<sup>th</sup> August 2020, 1<sup>st</sup> September 2020, 12<sup>th</sup> October 2020]

LULC maps from Bhuvan 2015- 2016

Sandy Soil texture map from Bhuvan

## Methodology

Georectification of the images using polynomial 2 equation: The downloaded maps were georectified using polynomial 2 equation.

Clipping the data: As the image was obtained for the whole country the raster image was clipped by using the Rajasthan shapefile.

Reclassify by table: To find out most suitable regions for nesting, the LULC and SWI maps were reclassified. From the LULC map, features corresponding to fallow land and wasteland were identified and their corresponding pixel values were given a value 1 and rest of the features were given 0 value. In SWI raster, the pixel values 0.33 to 0.49 were given a value of 1 and other pixels were given 0 value.

Raster Calculator: The reclassified images and Sandy soil map were added together to give final maps. Four maps were obtained. Higher pixel values represented regions which were highly suitable for nesting regions. Using the map layout, maps were generated and then exported as image.

## Application of the Maps

These maps highlight the potential nesting regions of Desert locust in different districts of Rajasthan during the breeding seasons. Regions which have a large no. of suitable nesting sites can be put under surveillance by using the ground truth data from LWO ( Locust Warning Organisation) and the eggs can be removed from those regions. This would help in reducing the threat of locust swarms in India.