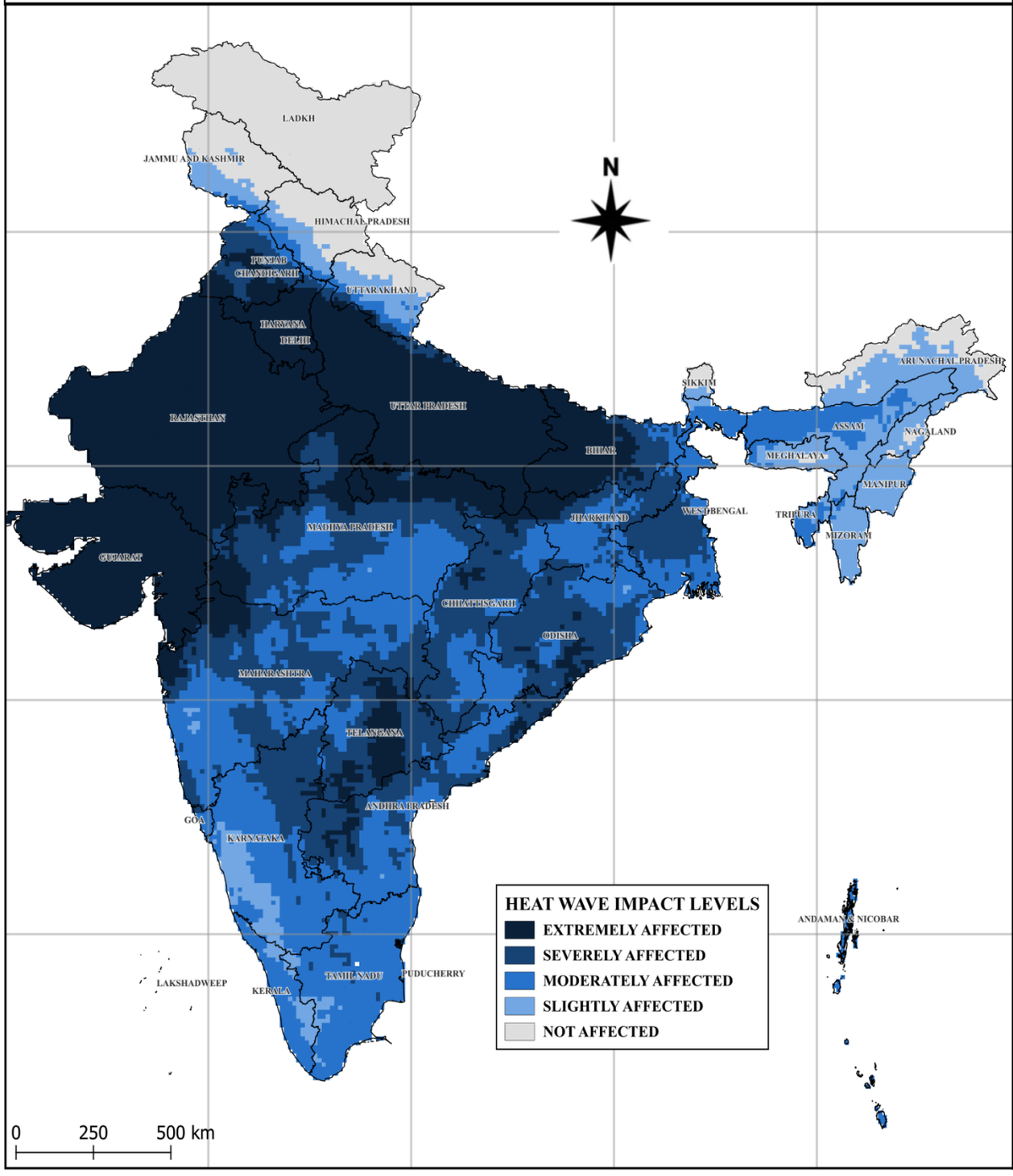
MAPPING THE IMPACT OF HEAT WAVES IN INDIA



Map Description And Analysis

Introduction:

The project aims to assess and classify the impact of heat waves across different regions and states in India in 2024. By identifying and analyzing the specific factors contributing to the intensification of heat waves, the project seeks to understand the regional vulnerabilities and the extent of heat wave impacts. The ultimate goal is to highlight the urgent need to address this escalating environmental issue and provide a framework for understanding how different areas are affected by extreme heat.

SDG and Theme:

This project is closely aligned with Sustainable Development Goal 13, which focuses on taking urgent action to combat climate change and its impacts. By analyzing the occurrence and severity of heat waves in India, the project contributes to understanding how climate change is exacerbating extreme weather events. It also emphasizes the importance of building resilience in communities most affected by these changes. The insights gained from this project are crucial in supporting efforts to mitigate the effects of climate change and develop sustainable strategies for managing and reducing the risk of heat waves.

Importance of the Project:

This project is crucial as it addresses a rapidly growing environmental challenge in India—heat waves. The increasing frequency and intensity of heat waves are causing significant direct impacts, including widespread health crises and fatalities, particularly in the Northern and Central regions. The project underscores the need for effective disaster management and policy interventions, as these extreme weather events pose a serious threat to public health and safety. By highlighting the direct impacts of heat waves, this research aims to contribute valuable insights that can guide future actions to protect vulnerable populations.

Data Used:

The project utilizes various data from 2024 to examine factors contributing to the creation of heat waves. These include both direct and indirect factors. Direct factors involve surface air temperature, land surface temperature, precipitation, and air moisture, which are crucial in understanding the immediate conditions leading to heat waves. Indirect factors, such as greenness, carbon emissions, elevation data (DEM), latent heat flux, and surface albedo, offer additional insights into how environmental and geographical elements influence heat wave severity. Together, these data sources provide a comprehensive understanding of the dynamics behind heat wave formation and impact across India.

Classification of Heat Wave Impact:

Extremely Affected: Severe heat waves happen often, causing many deaths and serious problems.
Highly Affected: Frequent, intense heat waves occur regularly, leading to health risks and concerns.
Moderately Affected: High temperatures cause discomfort, like dizziness and tiredness.
Less Affected: Slight temperature rises lead to occasional discomfort.
Not Affected: Heat waves don't directly harm people, but the environment is subtly affected, like faster snow melt and changes in natural landscapes.

Results:

Class (Name)	Approximate Area Cover (Sq.km)	Percentage of Total Area (%)
Class 5 (EXTREMELY AFFECTED)	857,872	26.10
Class 4 (SEVERELY AFFECTED)	745,723	22.69
Class 3 (MODERATELY AFFECTED)	1,135,293	34.53
Class 2 (SLIGHTLY AFFECTED)	222,014	6.75
Class 1 (NOT AFFECTED)	326,361	9.93

About Me:
I am Gurumurthy R, a 3rd-year Geo-Informatics Engineering student at Anna University Regional Campus, Tirunelveli. As an individual participant in the IIT Bombay Mapathon 2024, I selected the project titled "Mapping Heat Waves and Their Impact in India" to address the growing issue of heat waves in the country. Through this project, I aim to contribute to climate resilience by analyzing the regions most affected.

Contact Info:
Email: gurumurthy.00300@gmail.com
GitHub: To Know more