June 4, 2025

#EU GREEN WEEK

Partner Event

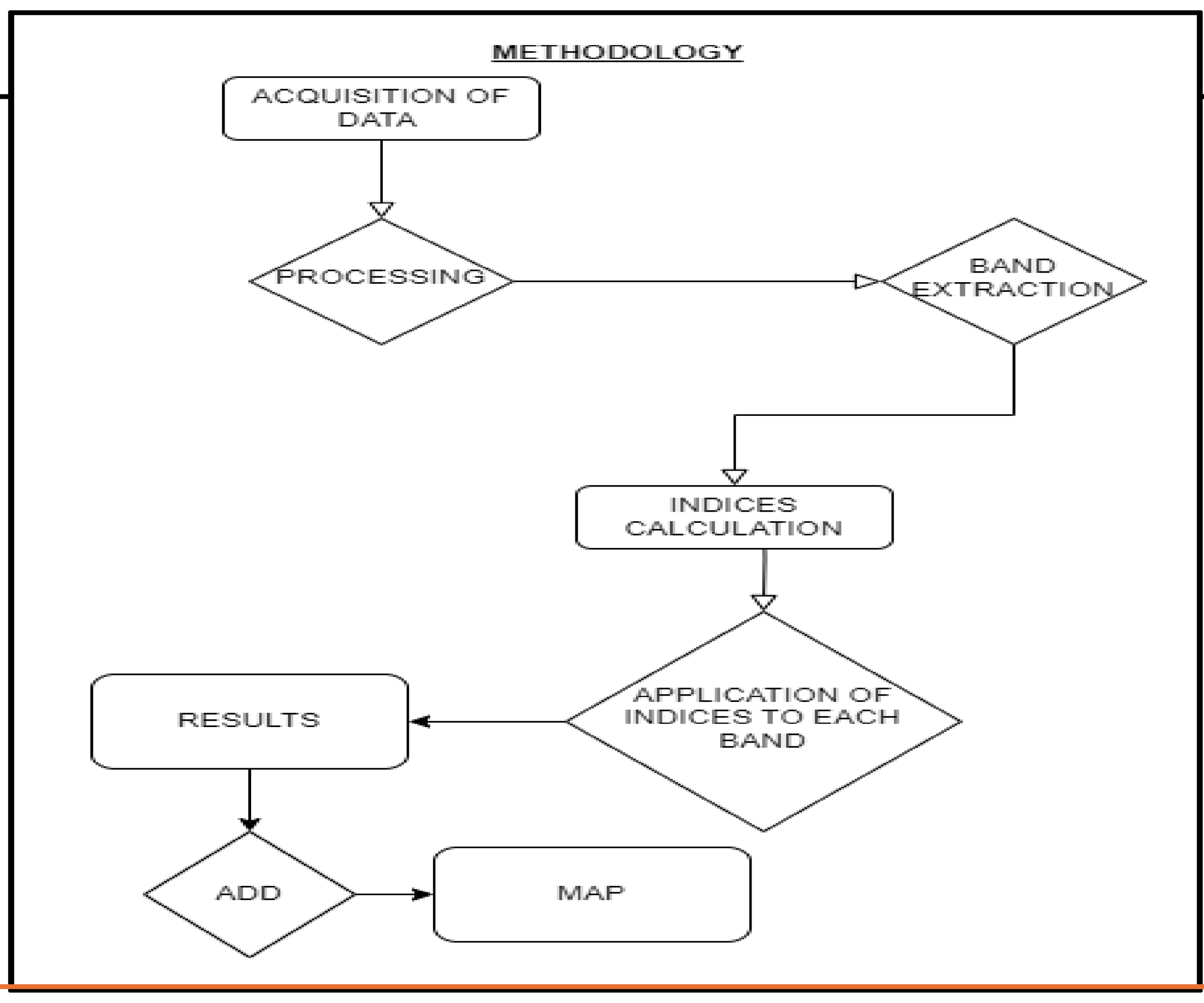
ASSESSING THE EFFECTS OF FOREST FIRES ON FOREST COVER USING REMOTE SENSING TECHNOLOGY :A CASE STUDY OF ABERDARE FOREST

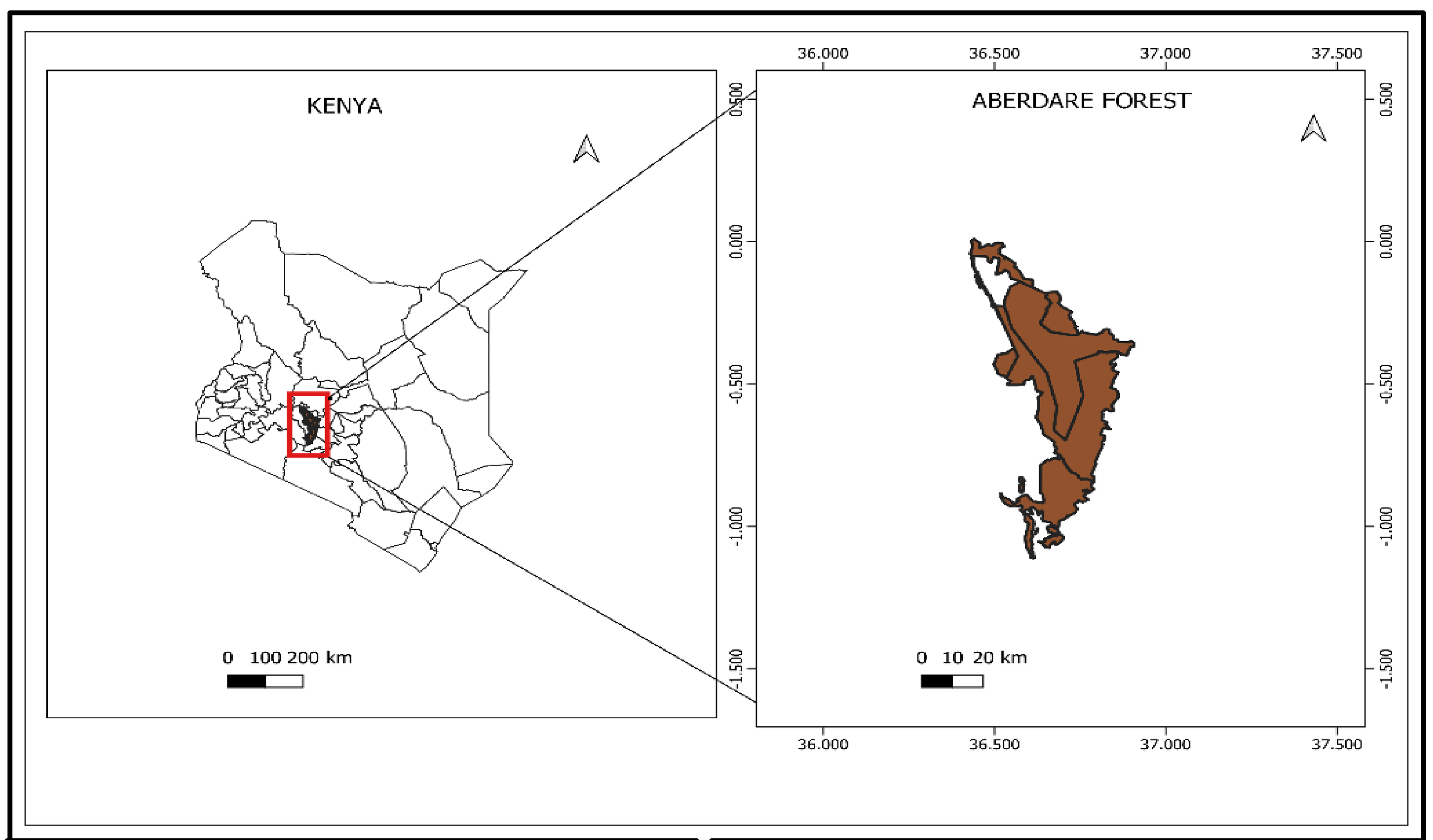
Introduction/background

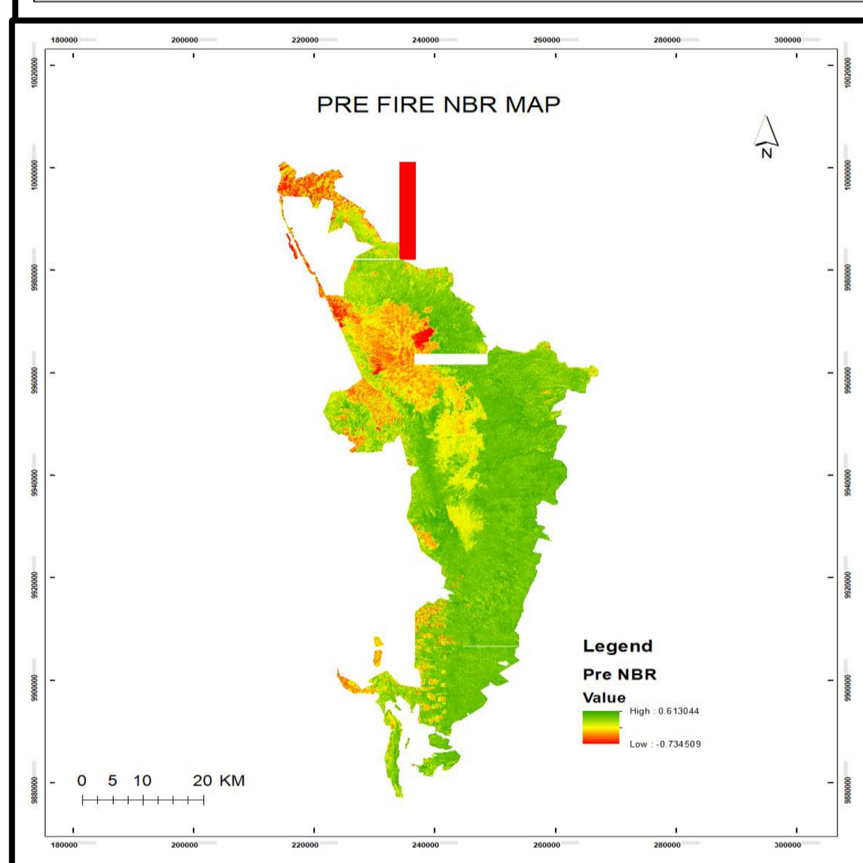
Forest fires are a significant global ecological and environmental concern, affecting both natural ecosystems and human well-being (Hernandez-Blanco et al,2022). They are a recurrent threat to one of Kenya's critical ecological zones, the Aberdare forest is significantly impacted by these fires (Kigomo et al,2024). A big fire in 2022 devastated over 550 hectares of the forest, while a week-long incident in 2023 destroyed about 40,000 acres of the Aberdare forest (Kanyara,2023)

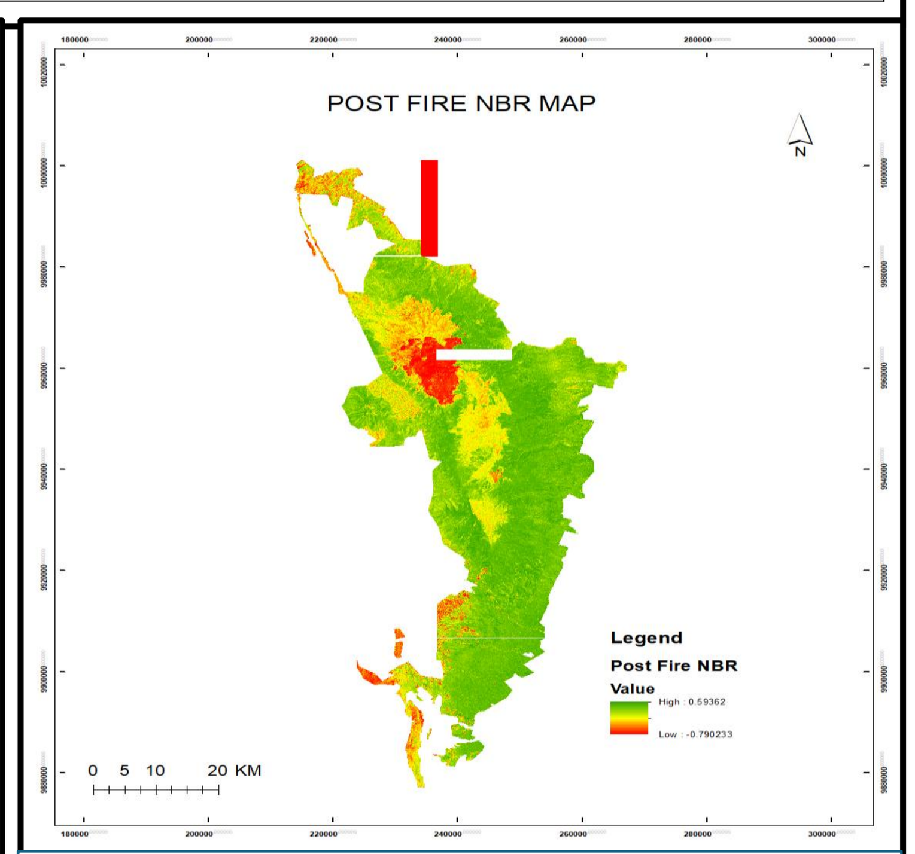
Goals /Objectives

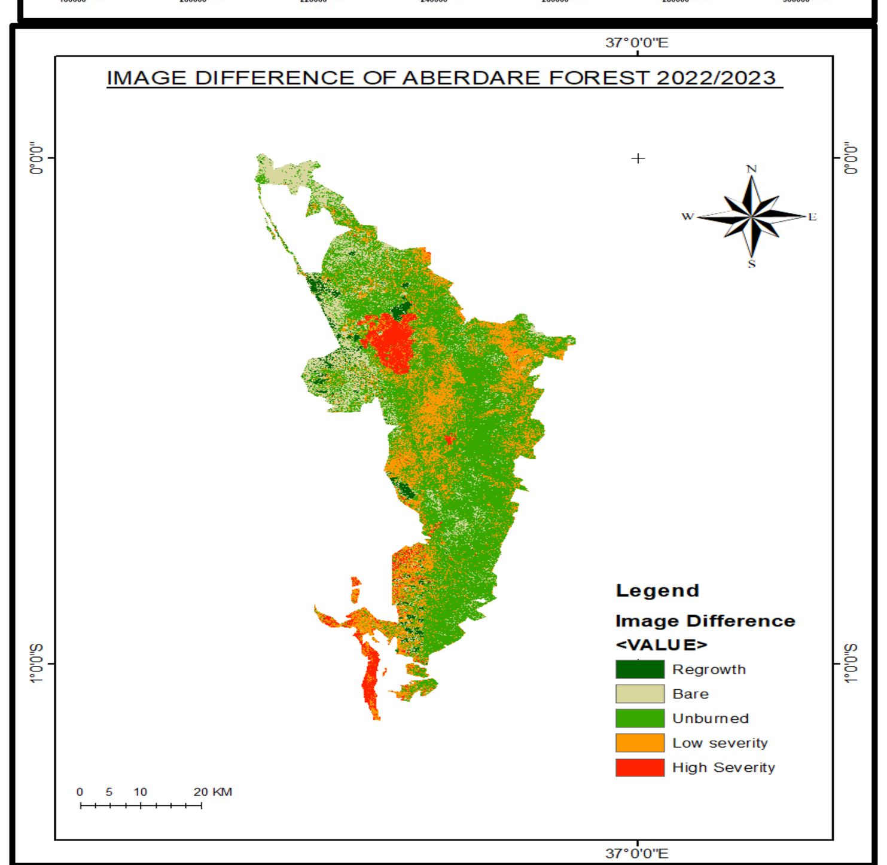
- Analyze the amount of forest cover loss as a result of forest fires.
- Assess the severity of forest fires on the burnt areas.
- Assess the regenerative capacity of the Aberdare forest.
- Assess the forest health in the pre fire and post fire event times









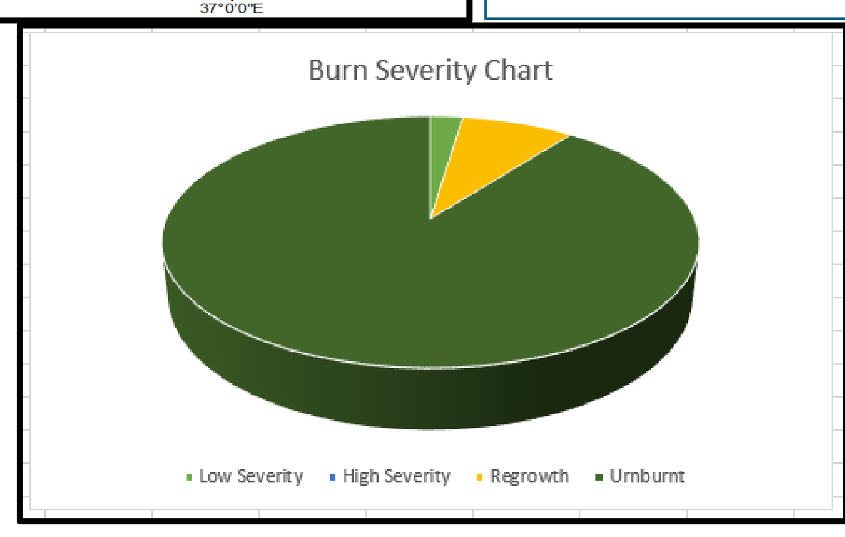


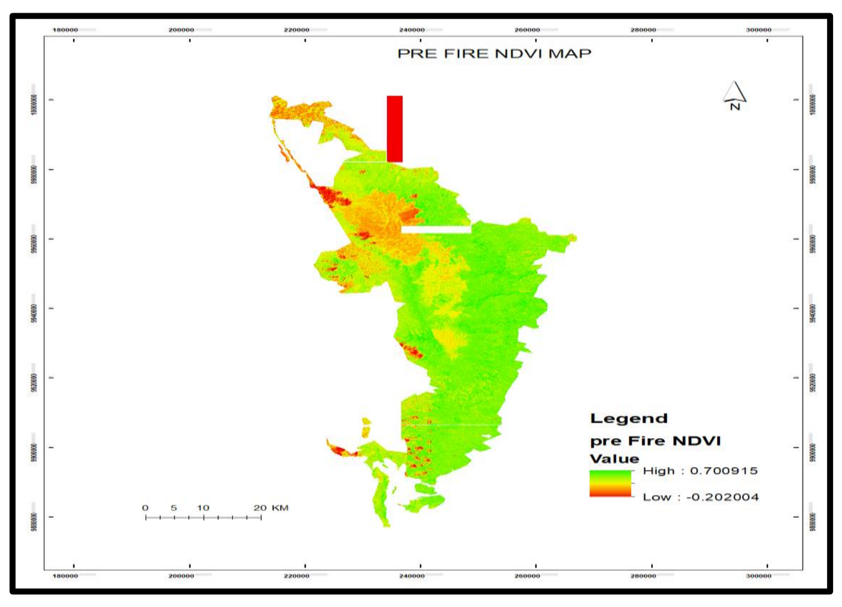
1: Object (4 properties)
Class: High Severity
Hectares: 23.31
Percentage: 0.01
Pixels: 259

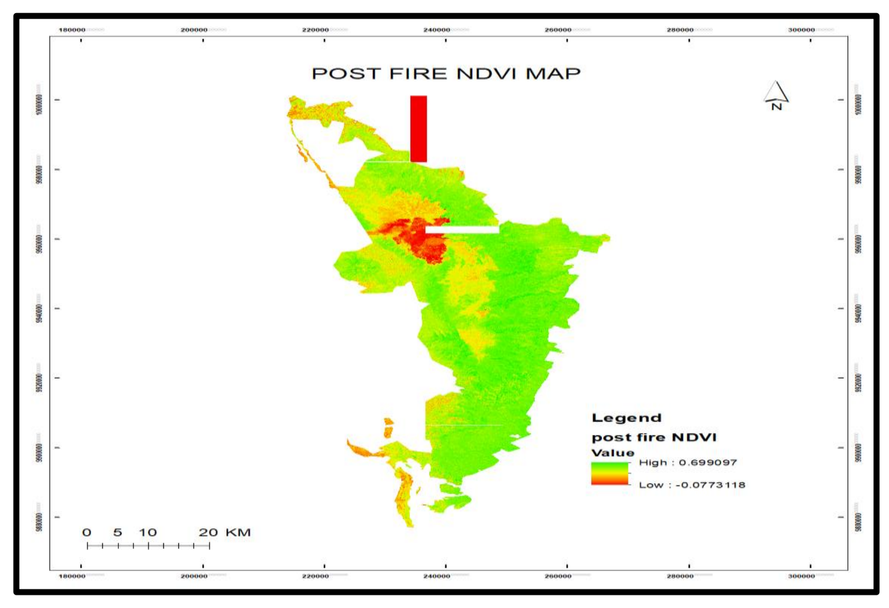
2: Object (4 properties)
Class: Low Severity
Hectares: 5291.19
Percentage: 2.33
Pixels: 58791

3: Object (4 properties)
Class: Unburned
Hectares: 203574.42
Percentage: 89.57
Pixels: 2261938

4: Object (4 properties)
Class: Regrowth
Hectares: 18391.59
Percentage: 8.09
Pixels: 204351







Conclusion

We acknowledge the multifaceted nature of forest fire and focus on preventative measures, fuel management strategies, and early detection systems, we strive to minimize fire risks and protect our valuable forest ecosystems.

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References

Hernández-Blanco, M., Costanza, R., Chen, H., DeGroot, D., Jarvis, D., Kubiszewski, I., ... & van ‘t Hoff, V. (2022). Ecosystem health, ecosystem services, and the well-being of humans and the rest of nature. *Global change biology*, *28*(17), 5027-5040.

Kigomo, J. N., Obwoyere, G., & Kirui, B. (2024). Evaluating Dynamics of Carbon Pools Resulting from Redistribution Among Biomass Components Following Wildfires in Aberdare Afromontane Forests, Kenya. *Journal of the Kenya National Commission for UNESCO*, *5*(1).

Kanyara, S. (2023, February 23). Raging fires put off as experts blames in flux of people. *The Star Times*. https://www.the-star.co.ke/news/2023-02-23-raging-fires-put-off-as-expert-blames-influx-of-people