

NYIRAGONGO'S GREEN REVOLUTION: FROM FIERY DESTRUCTION TO LUSH REBIRTH

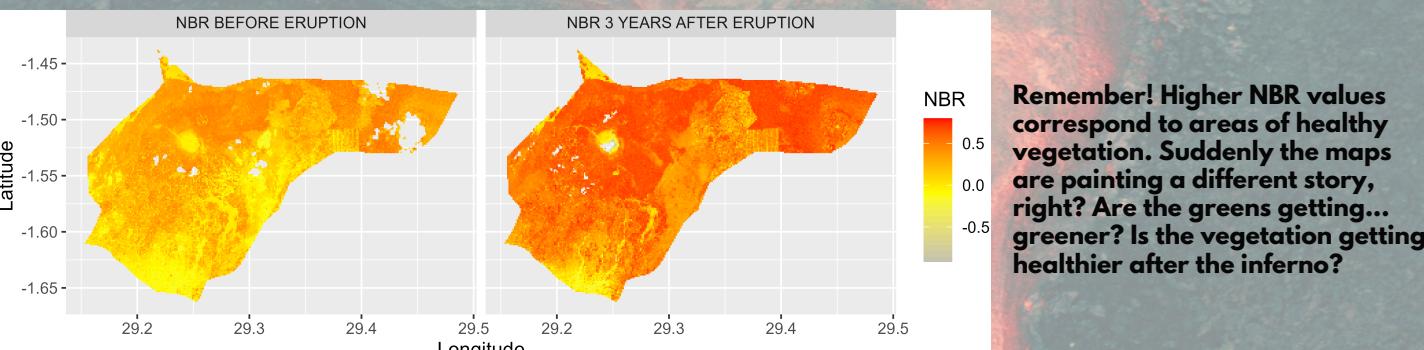
INTRODUCTION



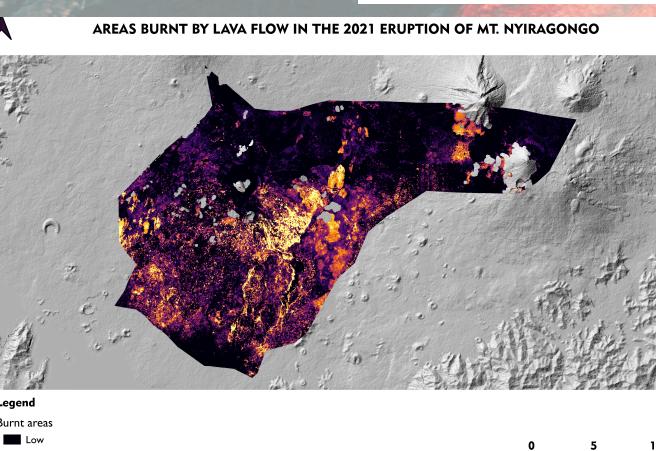
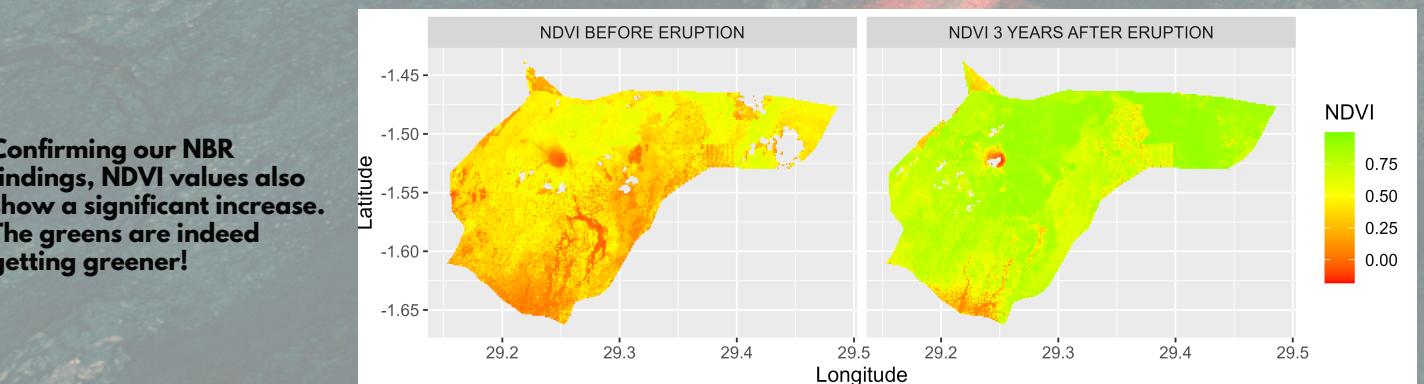
On 22nd May 2021, Mount Nyiragongo roared to life, painting the sky red and scarring the landscape. For many, this was like nature's violent reset button that changed Nyiragongo forever. How was the previously familiar landscape going to change in its quest to stay the same?

RESULTS

NORMALIZED BURNT RATIO BEFORE AND AFTER ERUPTION



NORMALIZED DIFFERENCE VEGETATION INDEX BEFORE AND AFTER ERUPTION



CONCLUSION

From Ashes to Emerald:

Nyiragongo's 2021 eruption was not an ending, but a dramatic new beginning. As lush greenery reclaims the once-scorched earth, confirmed by both NBR and NDVI increases, we're reminded of nature's incredible ability to adapt and thrive. The volcano's fury has given way to an explosion of life, turning a tale of destruction into one of hope and renewal.

By Yegon Kipruto Elkana

MATERIALS AND METHODS

To accomplish this project, the story begins with a view from above, using Sentinel 2 imagery to peek into the past and present of Nyiragongo. Stepwise, this is the methodology:

1. 3 year composites before and after the eruption
2. Preprocessing and cloud masking
3. Normalized Burnt Ratio calculation
4. Using the Delta Normalized Burnt Ratio to extract burnt areas
5. Normalized Difference Vegetation Index calculation
6. Change in vegetation
7. Correlation between the thriving vegetation and burnt areas

Remember! Higher NBR values correspond to areas of healthy vegetation. Suddenly the maps are painting a different story, right? Are the greens getting... greener? Is the vegetation getting healthier after the inferno?

Even more surprisingly, the areas of increased vegetation correspond to the areas initially burnt by lava flow. What could cause this verdant miracle? The answer lies in the very ash that once choked the sky. Rich in minerals like phosphorus, potassium, and calcium, volcanic ash is nature's own fertilizer bomb.