Preface

It is with great pleasure and a sense of accomplishment that I present this thesis titled "Habitat Suitability and Landscape Connectivity Modelling of Greater One Horned Rhino Conservation in Kaziranga National Park - A Spatially Explicit Approach." This thesis represents the culmination of extensive research, analysis, and dedication towards understanding and conserving the iconic Greater One Horned Rhino (Rhinoceros unicornis) population in the remarkable landscape of Kaziranga National Park.

The motivation behind this research stems from my profound interest and passion for wildlife conservation, particularly the conservation of endangered species. The Greater One Horned Rhino, with its historical significance and ecological importance, serves as a flagship species for conservation efforts in the region. Recognizing the urgent need to protect and manage their habitat effectively, this study aims to contribute to the understanding of habitat suitability and landscape connectivity patterns crucial for their survival.

The research presented in this thesis utilizes a spatially explicit approach, incorporating advanced geospatial technologies, remote sensing, and ecological modeling techniques. The analysis involves assessing habitat suitability, evaluating landscape connectivity, and identifying potential movement corridors for the rhino population. The integration of diverse environmental variables, such as climate, land cover, topography, and human-induced factors, provides a comprehensive understanding of the complex dynamics influencing rhino habitat and connectivity.

The methodology employed in this study relies on state-of-the-art software tools, including MaxEnt for habitat suitability modeling and Circuitscape for landscape connectivity analysis. These tools, combined with high-resolution satellite imagery and field data, enable a robust assessment of habitat suitability and the identification of critical areas for conservation interventions.

I would like to express my heartfelt gratitude to my research guide, Dr. G Areendran and Dr.T.P. Singh, for their unwavering support, guidance, and valuable insights throughout this research endeavour.

I extend my sincere appreciation to the administrators, researchers, and field personnel at Kaziranga National Park for their cooperation, assistance, and willingness to share their expertise and insights. Their contributions have been indispensable in acquiring essential data and understanding the on-ground realities of rhino conservation.

Lastly, I would like to express my gratitude to all the individuals who directly or indirectly contributed to this research. Their participation, collaboration, and sharing of knowledge have played a significant role in the successful completion of this study.

I hope that this thesis contributes to the existing knowledge and understanding of habitat suitability and landscape connectivity modeling for the conservation of the Greater One Horned Rhino in Kaziranga National Park. It is my sincere wish that the findings presented herein inform and guide future conservation strategies and actions aimed at ensuring the long-term survival and resilience of this magnificent species.

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