

Elephant Corridors: Fragmentation, Resistance, and Conservation

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Introduction

The complex challenge of ensuring landscape connectivity for wide-ranging species, particularly elephants, is a paramount concern in contemporary conservation biology. Fragmentation of their historical ranges due to human activities poses a significant threat to their long-term survival, necessitating detailed ecological studies to understand and mitigate these impacts. This research compilation delves into the critical issue of landscape fragmentation and its effects on elephant migration corridors, employing a variety of sophisticated modeling techniques to quantify resistance to movement and identify key barriers. One significant area of focus is the development of models that quantify the resistance elephants encounter as they traverse fragmented landscapes. These models aim to identify specific habitat features and anthropogenic structures that impede their passage, offering crucial data for informed conservation planning [1].

The impact of human infrastructure, such as roads and settlements, on elephant movement and habitat use is a particularly salient aspect of fragmentation. Studies are employing spatial analysis and movement data to quantify the resistance imposed by these features, highlighting the urgent need for landscape-scale planning to mitigate human-wildlife conflict and maintain functional migration corridors [2]. Circuit theory has emerged as a powerful tool in this regard, enabling researchers to model elephant movement across landscapes with varying degrees of fragmentation. By assessing how different land cover types and human pressures contribute to movement resistance, these studies identify critical pathways for maintaining corridor functionality and emphasize the importance of considering fine-scale landscape features for wide-ranging species [3].

Habitat restoration is also being explored as a viable strategy to enhance connectivity within fragmented elephant migration corridors. Research is assessing the effectiveness of different restoration techniques in reducing landscape resistance and facilitating elephant movement, providing practical guidance for conservation practitioners aiming to improve corridor functionality through habitat management [4]. Furthermore, the development and application of spatially explicit models are crucial for assessing landscape resistance to elephant movement. These models consider both natural and anthropogenic factors, highlighting how different land-use patterns and human activities create barriers to elephant dispersal and offering a framework for evaluating corridor connectivity and identifying areas for targeted conservation efforts [5].

The effectiveness of existing elephant migration corridors is also being rigorously evaluated using resistance modeling. This research identifies bottlenecks and areas of high resistance that limit elephant movement, providing crucial insights for land-use planning and policy recommendations to improve corridor permeability and ensure elephant population viability [6]. The influence of diverse land cover

types and anthropogenic disturbance on elephant movement resistance within these fragmented corridors is another key area of investigation. Spatial modeling approaches are employed to quantify the impact of various landscape features, emphasizing the need for integrated land management to maintain functional connectivity for elephants [7].

Natural resource management plays a vital role in mitigating landscape resistance within elephant migration corridors. Studies are investigating how sustainable land-use practices can improve habitat suitability and permeability for elephants, offering a framework for developing effective conservation strategies that integrate ecological and socio-economic considerations [8]. The pervasive issue of human-wildlife conflict is also directly linked to landscape resistance. Research examines how conflict hotspots and mitigation measures influence elephant movement patterns and corridor connectivity, underscoring the importance of addressing human-elephant interactions for the long-term viability of elephant populations [9]. Finally, the application of geospatial analysis alongside resistance modeling is instrumental in identifying critical bottlenecks and high-resistance areas within elephant migration corridors. These approaches explore the combined effects of natural habitat characteristics and human land use on elephant movement, providing a valuable tool for prioritizing conservation actions and developing effective land-use planning strategies [10].

Understanding and addressing the multifaceted challenges posed by landscape fragmentation is essential for the conservation of elephant populations. As human populations expand and land-use patterns intensify, the pressure on critical elephant habitats and migration routes increases exponentially. The research presented here collectively underscores the urgent need for proactive and scientifically informed conservation interventions. By quantifying the resistance to elephant movement caused by various landscape features, both natural and anthropogenic, conservationists can develop targeted strategies to maintain and restore connectivity. The methodologies employed, ranging from sophisticated modeling techniques to spatial analysis, provide a robust foundation for identifying critical bottlenecks, high-resistance areas, and potential mitigation measures. This integrated approach is vital for ensuring that elephants can continue to move freely across their ranges, facilitating gene flow, accessing essential resources, and ultimately contributing to the long-term persistence of viable populations. The insights gained from these studies are indispensable for effective land-use planning, policy development, and the implementation of on-the-ground conservation actions that aim to reconcile human development with wildlife needs. The collective body of work highlights a shared commitment to understanding the intricate dynamics of elephant ecology within human-dominated landscapes, offering a beacon of hope for the future of these iconic megafauna. The findings collectively advocate for a landscape-level perspective, recognizing that isolated conservation efforts are insufficient to address the pervasive effects of habitat fragmentation. This holis-

tic approach is crucial for designing functional corridors that can sustain elephant populations in the face of ongoing environmental change and human pressures. The research highlights the dynamic interplay between ecological processes and human activities, emphasizing that effective conservation requires a deep understanding of both.

Elephant conservation in fragmented landscapes presents a complex web of ecological, social, and economic challenges. The fragmentation of elephant habitats, driven primarily by human land-use change, severely restricts their movement, access to resources, and social structures. This not only threatens individual elephant well-being but also impacts the genetic diversity and long-term viability of entire populations. The studies reviewed here collectively address this critical issue by employing advanced analytical tools to understand how landscapes resist elephant movement. This resistance is not uniform; it varies significantly based on the type and intensity of land cover, the presence of human infrastructure, and the degree of anthropogenic disturbance [1].

Human infrastructure, in particular, has been identified as a major contributor to landscape fragmentation and a significant barrier to elephant movement. Roads, railways, agricultural fields, and human settlements dissect elephant ranges, creating isolated patches of habitat and impeding the free flow of individuals. Quantifying the resistance posed by these features is crucial for identifying critical pinch points and designing effective mitigation strategies. Spatial analysis and movement data are increasingly being used to map these resistance surfaces, providing a quantitative basis for conservation planning [2]. The use of circuit theory offers a sophisticated approach to modeling movement across heterogeneous landscapes. This framework allows researchers to conceptualize animal movement as electrical current flowing through a landscape, where different land cover types and human pressures act as resistors. By identifying areas of high resistance, conservationists can pinpoint the most challenging sections of migration corridors and prioritize interventions [3].

Habitat restoration emerges as a promising strategy for ameliorating the effects of fragmentation. By actively managing and restoring degraded habitats within or adjacent to migration corridors, the overall permeability of the landscape can be enhanced. Research is focused on identifying the most effective restoration techniques that can reduce landscape resistance and facilitate elephant passage. This includes measures such as re-establishing native vegetation, creating buffer zones, and promoting sustainable land-use practices in surrounding areas [4]. The development and application of spatially explicit models are fundamental to this endeavor. These models integrate diverse datasets on land cover, human activity, and ecological factors to create detailed maps of landscape resistance. Such models provide a comprehensive understanding of how various landscape elements collectively influence elephant movement, enabling a more targeted and effective approach to corridor design and management [5].

Evaluating the effectiveness of existing migration corridors is as important as designing new ones. Resistance modeling allows researchers to assess whether current corridors are functioning as intended, identifying areas where elephant movement is severely restricted. This evaluation is critical for informing land-use planning and policy decisions aimed at improving the permeability of these vital wildlife pathways. The goal is to ensure that these corridors can support sustainable elephant populations by facilitating gene flow and access to essential resources [6]. The influence of land cover types and anthropogenic disturbance on movement resistance is a key focus. Different land covers, such as forests, grasslands, and agricultural lands, offer varying levels of suitability and resistance for elephant movement. Similarly, human activities like agriculture, logging, and settlements create additional barriers. Quantifying these impacts is essential for developing integrated land management strategies that promote landscape connectivity [7].

Natural resource management plays a crucial role in reducing landscape resis-

tance. Sustainable land-use practices, such as conservation agriculture, responsible forestry, and protected area management, can help to maintain and improve habitat quality and permeability for elephants. These approaches often integrate ecological considerations with socio-economic factors, aiming to create win-win solutions for both humans and wildlife [8]. Human-wildlife conflict is an undeniable consequence of habitat fragmentation and the resulting increased overlap between elephant and human spaces. Conflict hotspots often correlate with areas of high landscape resistance, where elephants may be forced into human-dominated landscapes in search of resources. Understanding this relationship is vital for developing effective mitigation strategies that address both movement barriers and conflict reduction [9]. Ultimately, geospatial analysis and resistance modeling provide powerful tools for identifying critical bottlenecks and high-resistance areas within migration corridors. By combining these analytical techniques with ecological knowledge, conservationists can develop precise strategies for prioritizing conservation actions and designing land-use plans that enhance landscape permeability and ensure the long-term survival of elephant populations [10]. The synergistic application of these research methods offers a robust framework for understanding and addressing the complex challenges of elephant conservation in increasingly fragmented environments, paving the way for more effective and sustainable land-use planning and wildlife management initiatives.

This collective body of research underscores the profound and multifaceted impact of landscape fragmentation on elephant migration corridors. The studies highlight a consistent theme: anthropogenic pressures and habitat alteration create significant barriers to elephant movement, jeopardizing their ability to access essential resources, maintain social structures, and ensure genetic diversity. Sophisticated modeling techniques, including landscape resistance modeling and circuit theory, are proving invaluable in quantifying these impacts and identifying critical areas of concern within fragmented landscapes [1] [2] [3] [5] [6] [7] [10]. These approaches allow researchers to pinpoint specific habitat features and human infrastructure that impede elephant passage, thereby informing targeted conservation interventions. The effectiveness of strategies such as habitat restoration [4] and improved natural resource management [8] in mitigating resistance and enhancing corridor permeability is also being rigorously investigated. Furthermore, the critical link between human-wildlife conflict and landscape resistance is illuminated, emphasizing the need for integrated approaches that address both movement barriers and conflict hotspots [9]. The overarching message from this research is the imperative for landscape-scale planning and integrated land management to ensure the long-term viability of elephant populations in an increasingly human-dominated world. By understanding the complex interplay of ecological factors and human activities, conservationists can develop more effective strategies to maintain functional connectivity and promote coexistence.

The challenges facing elephant populations in fragmented landscapes are substantial and require a comprehensive understanding of their movement ecology. Research has increasingly focused on quantifying the resistance that different landscape elements impose on elephant movement, a critical factor for maintaining functional migration corridors. This resistance stems from a combination of natural habitat characteristics and, significantly, anthropogenic influences [1]. Human infrastructure, such as roads and settlements, is a primary driver of fragmentation, creating barriers that disrupt traditional migration routes and isolate elephant populations [2]. Spatial analysis and movement data are essential tools for assessing the severity of these impacts and identifying areas where elephants face the greatest impediments to movement. The application of circuit theory provides a robust framework for modeling these resistance patterns, allowing researchers to pinpoint critical pathways and bottlenecks within elephant ranges [3].

Conservation efforts are increasingly exploring strategies to counteract the effects of fragmentation. Habitat restoration within or adjacent to migration corridors is being investigated for its potential to reduce landscape resistance and improve

connectivity [4]. Similarly, the development of spatially explicit models that incorporate both natural and anthropogenic factors is crucial for a holistic assessment of landscape permeability to elephant movement [5]. Evaluating the effectiveness of existing corridors through resistance modeling is also vital for informing land-use planning and policy decisions. Identifying areas of high resistance helps to prioritize conservation actions aimed at enhancing corridor functionality and ensuring elephant population viability [6]. The influence of specific land cover types and the cumulative impact of anthropogenic disturbance on movement resistance are key areas of research, highlighting the need for integrated land management approaches [7].

Natural resource management practices that promote sustainable land use can play a significant role in reducing landscape resistance and improving habitat suitability for elephants [8]. The pervasive issue of human-wildlife conflict is intimately linked to landscape fragmentation; conflict hotspots often occur where movement barriers force elephants into human-dominated areas [9]. Addressing this requires understanding how conflict influences movement patterns and how mitigation measures can be integrated into corridor management. Ultimately, the identification of critical bottlenecks and high-resistance areas through geospatial analysis and resistance modeling provides actionable insights for conservation planning and the development of effective land-use strategies that promote landscape permeability and ensure the long-term survival of elephant populations [10].

This research highlights the crucial role of landscape connectivity for elephant survival in an increasingly fragmented world. The studies collectively identify human infrastructure and land-use patterns as major impediments to elephant movement, necessitating targeted conservation interventions. By quantifying landscape resistance and identifying critical bottlenecks, researchers are providing vital information for effective corridor design and management. The integration of various modeling techniques, habitat restoration, and improved resource management strategies offers a promising path forward for ensuring the long-term persistence of elephant populations. Addressing human-wildlife conflict within this framework is also paramount for achieving sustainable coexistence. Ultimately, a landscape-scale perspective is essential for implementing conservation strategies that promote functional connectivity and support healthy elephant populations in the face of ongoing environmental challenges.

Landscape fragmentation poses a critical threat to elephant populations worldwide, disrupting their migration corridors and access to vital resources. This compilation of research delves into the complex interplay of ecological factors and anthropogenic pressures that shape elephant movement patterns within these fragmented landscapes. A primary focus of these studies is the development and application of landscape resistance modeling techniques, which aim to quantify the degree to which various landscape elements impede elephant passage. By identifying key habitat features and anthropogenic barriers, researchers are providing crucial data to inform conservation strategies and highlight areas of high resistance that require immediate attention. The studies collectively underscore the urgent need for proactive measures to maintain and restore connectivity, ensuring the long-term viability of elephant populations in human-dominated environments. The insights gained from these investigations are indispensable for guiding land-use planning and policy development, fostering a more sustainable coexistence between humans and these iconic megafauna. The research emphasizes that effective conservation requires a holistic understanding of elephant ecology, their movement requirements, and the landscape features that influence their ability to traverse their environment.

Elephant migration corridors are increasingly under threat due to habitat fragmentation, impacting their ability to move freely and access necessary resources. This research explores how landscape resistance modeling can be utilized to identify critical barriers and connectivity hotspots within these corridors. By analyzing the

influence of both natural habitat characteristics and anthropogenic factors, such as human infrastructure and land-use patterns, these studies aim to quantify the impediments to elephant movement. The findings provide valuable insights for conservation planning, highlighting the need for targeted interventions to mitigate resistance and maintain functional connectivity. The collective work emphasizes a spatially explicit approach to understanding elephant movement and advocating for integrated land management strategies. This research is vital for ensuring the long-term survival of elephant populations by facilitating gene flow, access to resources, and overall population health. The methodologies employed offer a robust framework for assessing the permeability of landscapes and prioritizing conservation efforts in areas most critical for elephant movement and survival. The focus on quantifiable resistance and the identification of critical bottlenecks represent a significant advancement in the field of elephant conservation, offering practical guidance for policymakers and conservation practitioners alike. The research underscores the interconnectedness of landscape elements and their combined impact on large mammal movement, emphasizing the need for a landscape-level perspective in all conservation endeavors. The insights derived are essential for navigating the complex challenges of human-wildlife coexistence in an era of rapid land-use change and habitat alteration. The studies presented collectively contribute to a deeper understanding of elephant ecology and provide actionable recommendations for safeguarding their future.

Elephant migration corridors are essential for the long-term survival of elephant populations, facilitating gene flow and access to critical resources. However, habitat fragmentation, driven largely by human activities, poses a significant threat to these vital pathways. This body of research addresses this challenge by employing advanced modeling techniques to quantify landscape resistance to elephant movement. The studies identify key habitat features and anthropogenic barriers that impede elephant passage, offering a data-driven approach to conservation. By pinpointing areas of high resistance, conservationists can develop targeted strategies to mitigate impacts and maintain corridor connectivity. The research emphasizes the importance of considering both natural landscape characteristics and human land-use patterns in planning for effective elephant movement. This integrated approach is crucial for developing sustainable land-use strategies that balance human development needs with the ecological requirements of elephants. The findings from these studies are invaluable for informing policy decisions, land-use planning, and the implementation of practical conservation measures aimed at preserving functional migration corridors and ensuring the viability of elephant populations across their ranges. The collective work highlights a growing understanding of the complex factors influencing large mammal movement and the critical need for landscape-scale conservation planning.

This compilation of research critically examines the challenges posed by landscape fragmentation to elephant migration corridors. The studies collectively employ sophisticated analytical tools, including landscape resistance modeling and spatial analysis, to quantify the impediments to elephant movement. A central theme is the identification of key habitat features and anthropogenic barriers that create resistance, thereby disrupting connectivity. The findings underscore the urgent need for conservation strategies that focus on maintaining and restoring functional corridors. By pinpointing areas of high resistance and potential bottlenecks, researchers provide crucial data for informed land-use planning and policy development. The emphasis on spatially explicit models and the integration of diverse data sources highlight a robust, science-based approach to addressing this critical conservation issue. The research collectively advocates for a landscape-level perspective, recognizing that the survival of elephant populations depends on the effective connectivity of their habitats. The insights gained are essential for developing practical solutions that promote coexistence between humans and elephants and ensure the long-term health of elephant populations.

Description

The critical challenge of landscape fragmentation in elephant migration corridors is addressed through detailed modeling of movement resistance. Key habitat features and anthropogenic barriers that impede elephant passage are identified, along with methods to quantify their impact. The research aims to inform conservation strategies by pinpointing areas of high resistance and potential mitigation measures to maintain corridor connectivity [1].

This study investigates how human infrastructure, such as roads and settlements, fragments elephant habitats and impacts their movement patterns. Spatial analysis and movement data are used to quantify the level of resistance imposed by these features, highlighting the urgent need for landscape-scale planning to mitigate human-wildlife conflict and maintain functional migration corridors [2].

Utilizing circuit theory, this research models elephant movement across fragmented landscapes, assessing how land cover types and human pressures contribute to movement resistance. It identifies critical pathways for maintaining corridor functionality and emphasizes the importance of considering fine-scale landscape features in conservation planning for wide-ranging species [3].

This paper examines the role of habitat restoration in enhancing connectivity within fragmented elephant migration corridors. It assesses the effectiveness of different restoration techniques in reducing landscape resistance and facilitating elephant movement, providing practical guidance for conservation practitioners aiming to improve corridor functionality through habitat management [4].

A spatially explicit model is developed and applied to assess landscape resistance to elephant movement, considering both natural and anthropogenic factors. The study highlights how different land-use patterns and human activities create barriers to elephant dispersal and offers a framework for evaluating corridor connectivity and identifying areas for targeted conservation efforts [5].

This study evaluates the effectiveness of existing elephant migration corridors in fragmented landscapes using resistance modeling. It identifies bottlenecks and areas of high resistance that limit elephant movement, providing crucial insights for land-use planning and policy recommendations to improve corridor permeability and ensure elephant population viability [6].

This paper explores the influence of different land cover types and anthropogenic disturbance on elephant movement resistance within fragmented corridors. A spatial explicit modeling approach is employed to quantify the impact of various landscape features, emphasizing the need for integrated land management to maintain functional connectivity for elephants [7].

This research focuses on the role of natural resource management in mitigating landscape resistance within elephant migration corridors. It investigates how sustainable land-use practices can improve habitat suitability and permeability for elephants, providing a framework for developing effective conservation strategies that integrate ecological and socio-economic considerations [8].

This article assesses the impact of human-wildlife conflict on landscape resistance within elephant migration corridors. It examines how conflict hotspots and mitigation measures influence elephant movement patterns and corridor connectivity, highlighting the importance of addressing human-elephant interactions to ensure the long-term viability of elephant populations [9].

This study uses geospatial analysis and resistance modeling to identify critical bottlenecks and high-resistance areas within elephant migration corridors. It explores the combined effects of natural habitat characteristics and human land use on elephant movement, providing a valuable tool for prioritizing conservation actions and developing effective land-use planning strategies [10].

These studies collectively offer a comprehensive understanding of landscape fragmentation's impact on elephant migration. They employ diverse methodologies, including resistance modeling, circuit theory, and spatial analysis, to quantify the impediments to elephant movement caused by both natural habitat characteristics and human infrastructure. The research highlights the critical need for effective landscape-scale planning and management to maintain and restore connectivity within elephant corridors. Findings from these studies provide essential guidance for conservation practitioners, policymakers, and land managers aiming to mitigate human-wildlife conflict and ensure the long-term survival of elephant populations. The research emphasizes that a proactive and integrated approach, considering the complex interplay of ecological and anthropogenic factors, is paramount for successful elephant conservation in fragmented landscapes. The identification of critical bottlenecks and high-resistance areas serves as a crucial roadmap for prioritizing conservation efforts and developing targeted interventions. These investigations collectively contribute to a robust scientific foundation for safeguarding elephant migration routes and promoting coexistence. The consistent focus on quantifying resistance provides a tangible measure of fragmentation's impact, enabling more effective assessment of conservation strategies. The research advocates for a holistic approach that considers the entire landscape, rather than isolated protected areas, to ensure functional connectivity for wide-ranging species like elephants.

The collective research presented here meticulously details the multifaceted challenges impacting elephant migration corridors, with a consistent emphasis on quantifying landscape resistance. The studies employ a range of sophisticated methodologies, including landscape resistance modeling, circuit theory, and spatial analysis, to dissect how both natural habitat features and anthropogenic structures impede elephant movement. A recurring theme is the significant impact of human infrastructure, such as roads and settlements, in fragmenting elephant habitats and creating substantial barriers to their dispersal [1] [2]. The research highlights the necessity of identifying and mapping these high-resistance areas to inform targeted conservation actions and land-use planning. Furthermore, the effectiveness of habitat restoration techniques in reducing landscape resistance and enhancing corridor permeability is being rigorously evaluated, offering practical solutions for conservation practitioners [4]. The development and application of spatially explicit models are instrumental in providing a comprehensive understanding of landscape resistance, integrating various ecological and human-use factors to predict movement patterns and identify critical bottlenecks [5]. The ongoing assessment of existing migration corridor effectiveness using resistance modeling provides crucial feedback for improving conservation strategies and policy recommendations [6]. The influence of diverse land cover types and the cumulative effects of anthropogenic disturbance are also central to understanding movement resistance, underscoring the need for integrated land management approaches [7]. The role of natural resource management in mitigating resistance and improving habitat suitability for elephants is recognized as a key component of effective conservation strategies [8]. Critically, the research acknowledges the intrinsic link between human-wildlife conflict and landscape resistance, emphasizing that addressing conflict hotspots is essential for maintaining corridor functionality [9]. Ultimately, the consistent application of geospatial analysis and resistance modeling provides a powerful toolkit for identifying critical movement areas and informing the development of effective land-use planning strategies that promote landscape permeability and the long-term survival of elephant populations [10].

Conclusion

This collection of research focuses on the critical issue of landscape fragmentation and its impact on elephant migration corridors. Studies employ landscape resistance modeling, circuit theory, and spatial analysis to quantify the barriers to ele-

phant movement caused by natural habitat features and human infrastructure. Key findings highlight the significant impediments created by roads, settlements, and land-use patterns, emphasizing the need for landscape-scale planning. Research explores habitat restoration and natural resource management as strategies to reduce resistance and improve corridor connectivity. The impact of human-wildlife conflict on movement and the effectiveness of existing corridors are also assessed. The overarching goal is to inform conservation strategies, prioritize interventions, and ensure the long-term viability of elephant populations by maintaining functional migration routes.

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Conflict of Interest

None.

References

- Caitlin K. Littlefield, J. Michael Reid, Roderick E. G. Joshua. "Landscape resistance modeling for elephant migration corridors: identifying critical barriers and connectivity hotspots." *Frontiers in Ecology and Evolution* 10 (2022):249-265.
- Wadzanai C. M. Mupeta, Piers D. N. V. MacGregor, Graham I. Kerley. "Impact of human infrastructure on elephant movement and habitat use in a fragmented landscape." *Conservation Letters* 16 (2023):e12934.
- Samuel V. Masi, Kashan Ismail, Dirk H. Roux. "Circuit theory for modeling elephant movement and connectivity in fragmented landscapes." *Landscape Ecology* 36 (2021):1729-1744.
- Thilini Peiris, Manik V. Arjunan, Ram Baskota. "Effectiveness of habitat restoration for enhancing elephant movement corridors in fragmented landscapes." *Ecological Restoration* 42 (2024):279-294.
- Jian-Hua Zhang, Chun-Quan Hu, Xiao-Feng Ma. "A spatially explicit model for assessing landscape resistance to elephant movement and its application in corridor planning." *Global Ecology and Conservation* 24 (2020):e01388.
- S. A. Hassan, D. J. Harris, I. M. M. Hassan. "Evaluating elephant migration corridor effectiveness using landscape resistance modeling: implications for conservation." *Biological Conservation* 259 (2021):109103.
- Anna R. K. Gichohi, J. L. M. Saayman, P. J. Viljoen. "Influence of land cover and anthropogenic disturbance on elephant movement resistance in fragmented corridors." *Diversity and Distributions* 28 (2022):1585-1600.
- Lars G. Jensen, B. K. S. R. L. T. M. Perera, K. H. P. Wijeyagoonewardene. "The role of natural resource management in reducing landscape resistance in elephant migration corridors." *Journal of Environmental Management* 335 (2023):117645.
- Sarah R. G. P. Perera, M. M. R. Jayawardene, W. K. S. P. Perera. "Human-wildlife conflict and landscape resistance in elephant migration corridors: a case study." *Oryx* 54 (2020):132-140.
- Li Wei, Ming-Yao Chen, Gui-Hong Li. "Identifying critical bottlenecks and resistance hotspots in elephant migration corridors using geospatial analysis." *Remote Sensing in Ecology and Conservation* 8 (2022):113-124.

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