

Climate Change and Landscape Dynamics on Elephants' Distribution in Meru National Park Kenya

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Abstract

Climate change is a long-term shift in temperatures and weather patterns. These shifts have been found to be natural and human induced. Human activities are the main drivers of climate change primarily due to the use of fossil fuels. Climate change is a big threat to biodiversity and natural ecosystems. Climate change is a major contributor to the loss of biodiversity especially large mammals like elephants. Increased water shortage and habitat degradation as well as habitat fragmentation as a result of climate change and the attendant persistent drought has been identified as a serious threat to the survival of large mammals. In Kenya, high mortality of African elephants (*Loxodonta africana*) has been an issue of great concern to the government and conservationists. Although studies have attributed the death of elephants to human wildlife conflict and poaching, there is scarcity of robust evidence on the relationship between climate change and landscape dynamics on elephants' distribution in Meru National Park Kenya. Using time series data on elephants' population in Meru National Park and data on environmental changes in the park overtime, an attempt was made to analyze the relationship between climate change and landscape dynamics on elephants' distribution. The study established that drying of vegetation due to the high temperatures, habitat fragmentation, as well as drying of water points in areas mostly habited by elephants contributed significantly to elephants' population and landscape integrity. The study recommends that conservation efforts of African elephants should focus on mitigating the adverse effects of climate change in the park such as drilling ground water that is powered by solar energy to ensure sustainability.

Keywords: Biodiversity, Climate change, Impact, Mitigation