Influence of climate on the distribution of slender-billed vulture *Gyps tenuirostris* in Arunachal Pradesh, India

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The slender-billed vulture (*Gyps tenuirostris*) is a critically endangered species found in South and Southeast Asia, experiencing drastic population declines in recent decades. This study examines the impact of climate on its spatial distribution in Arunachal Pradesh, North East India. Conducted between 2016 and 2020, the study combined field surveys, GIS analysis (QGIS) of environmental data and satellite imagery to understand how climate affects *G. tenuirostris* distribution in the region. The findings demonstrate a positive correlation between vulture occurrence and both temperature ($r_s = 0.61$) and rainfall ($r_s = 0.29$). Conversely, there is a negative correlation with relative humidity ($r_s = -0.49$). This indicates that *G. tenuirostris* favours areas with higher temperature and rainfall, while avoiding regions with high relative humidity. These results shed crucial light on the role of climate in shaping the distribution of this vulture in Arunachal Pradesh. Understanding these factors is critical for assessing the potential impacts of climate change on vulture populations in the region and, ultimately, for guiding and enhancing conservation efforts aimed at safeguarding this critically endangered species.

Keywords: Climate change, conservation, endangered species, slender-billed vulture, spatial distribution.