# PREFACE

Himalaya is considered as data deficient region which generally lacks quantitative analysis needed to impact conservation and management policies for Avian Biology including Himalayan Pheasants. Although, monitoring on the Himalayan Pheasants are largely ignored for their conservation and habitat management due to their narrow habitats, mostly confined to mountain landscape having with severe climate and difficult topography to carry out the study. Taking this challenge, I worked on recent advances in modelling techniques and field studies and utilized existing records, which should help in improving conservation and habitat management of the Himalayan Pheasant in Eastern Himalaya.

This is significant because the prediction distribution model helps in finding the possibilities of new populations of vulnerable/threatened species in new projected areas, where no scientific exploration has been reached so far. Also, there are possibilities of the relocation of the sensitive species in newly predicted areas which may further help to strengthen in their conservation. Climate change model predicts how species will respond to global climate change under the present and future scenarios and provides useful clues of climate change threats on biodiversity in future. These ecological and climate change modelling techniques will help conserve the threatened and the climate-sensitive species before their valuable genetic assets plunge to extinction.

Considering habitat assessment crucial to understand conservation status of the Himalayan Pheasants, the analysis is done for woody species dominance, basal cover, regeneration pattern, ecological indices with the effect of climatic variables of the region in Khangchendzonga Biosphere Reserve. The forces of climate variable such as Potential evapotranspiration (PET) Actual evapotranspiration (AET) and Moisture Index (MI) showed a significant correlation with the species richness and altitudinal gradient of the study area. The study helps to weigh up the effect of geometric constraints and environmental factors in giving shape to the present structure of forest community composition in the biosphere reserve.

For population assessment of the Himalayan Pheasants in the biosphere reserve, the analysis is done on the present status of their availability along with density, encounter rate and seasonal's diversity in the altitudinal gradient. The conceptual frameworks of the impact of climate change on Himalayan Pheasants have given emphasis, based on local people's perception, because indigenous people are closely related with the natural rhythms and processes of their ecosystems. This study will help to identify the most priority conservation areas and sensitive habitat areas for the Himalayan Pheasant in the region and provide distribution data as the geo-referenced database of the Himalayan Pheasants in Eastern Himalaya.

These data can help conservation directives in addressing the conservation strategies and habitat management planning for Himalayan Pheasants, including associated climate sensitive native organisms of Himalaya.

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