List of Figures

Figures                  Page No.
1.1 Distribution map (in yellow shaded region) of galliformes in the Greater Himalaya 8
4.1 Geographic location of Khangchendzonga BR in Sikkim A) Boundary of Khangchendzonga BR overlaid on False Colour Composite LANDSAT imagery. B) Different watersheds in Khangchendzonga BR and Prek chu watershed as the study area. 24
4.2 A) Different elevation classes (1000m interval) and (B) different aspect classes present in Khangchendzonga BR. The intensive study area (Prek chu Catchment) is also indicated. 25
4.3 A) Different slope classes (10° interval) and (B) major habitat classes present in Khangchendzonga BR. The intensive study area (Prek chu Catchment) is also indicated. 26
4.4 Physical attributes of the intensive study area clockwise 4.4.1 Elevation categories, 4.4.2. Slope categories, 4.4.3. Aspect categories, 4.4.4. Habitat categories 37
5.1 Trails and scan points in Prek Chu Catchment (2008-2011) 42
5.2 Camera trap locations in Prek Chu Catchment in 2X2 km grids (2009-2010) 42
5.3 The best fit detection function model generated by DISTANCE analysis considering all blood pheasant in Prek chu Catchment of Khangchendzonga BR during the study period (2008-2011) 49
5.4 The best fit detection function model generated by DISTANCE analysis considering all monal sightings in Prek chu Catchment of Khangchendzonga BR during the study period (2008-2011). 51
5.5 Detection Probability curve generated by DISTANCE analysis considering all tragopan sightings in Prek chu Catchment of Khangchendzonga BR (2008-2011). 52
5.6 Detection Probability curve generated by DISTANCE analysis considering all Kalij sightings in Prek chu Catchment of Khangchendzonga BR (2008-2011) 53
5.7 Detection Probability curve generated by DISTANCE analysis considering all snow partridge sightings in Prek chu Catchment of Khangchendzonga BR during the study period (2008-2011) 54
5.8 Number of calling males across distance for different calling station in *Prek chu* Catchment of Khangchendzonga BR (2009-2010)

5.9 Number of calling males in different time (15m) interval in Prek chu Catchment of Khangchendzonga BR during the study period (2009-2010)

5.10 Locations of Indirect evidences of galliformes plotted (clockwise) a. Different aspect categories, b. Different slope categories, c. Different habitat categories, d. Different elevation categories

5.11 Relative frequency of locations where blood pheasant evidences were found in 1x1 km grids in *Prek chu* Catchment of Khangchendzonga BR during 2008-11

5.12 Relative frequency of locations where himalayan monal evidences were found in 1x1 km grids in *Prek chu* Catchment of Khangchendzonga BR during 2008-11

5.13 Relative frequency of locations where satyr tragopan evidences were found in 1x1 km grids in *Prek chu* Catchment of Khangchendzonga BR during 2008-11

5.14 Relative frequency of locations where kalij pheasant evidences were found in 1x1 km grids in *Prek chu* Catchment of Khangchendzonga BR during 2008-11

5.15 Relative frequency of locations where snow partridge evidences were found in 1x1 km grids in *Prek chu* Catchment of Khangchendzonga BR during 2008-11

5.16 Relative frequency of locations where hill partridge evidences were found in 1x1 km grids in *Prek chu* Catchment of Khangchendzonga BR during 2008-11

5.17 Graph showing the percentage of males, females and young in blood pheasant, himalayan monal and satyr tragopan in *Prek chu* Catchment of Khangchendzonga BR

6.1 Map showing locations of Camera traps in 1km×1km grids for occupancy survey of galliformes in different habitats of *Prek chu* Catchment of Khangchendzonga BR (2009-10)

6.2 Box Plot showing altitudinal distribution of galliformes in Khangchendzonga BR

6.3 Availability and use of (a) altitude, (b) aspect, (c) slope and (d) major habitat types by galliformes in Khangchendzonga BR, based on the Bonferroni confidence intervals calculated according to Neu *et al.*, (1974).

6.4 Comparision of summed AIC wt and average coefficients of sites covariates for psi of blood pheasant

6.5 Comparision of summed AIC wt and average coefficients of sites covariates for psi of himalayan monal
7.1 Schematic representation of steps involved in rule based model preparation for galliformes habitat suitability

7.2 Global correlation tree depicting correlation structure between eco-geographic variables used for ENFA of galliformes

7.3 Schematic representation of steps involved in Ecological Niche Factor Analysis and model preparation for galliformes habitat suitability

7.4 Potential habitat suitability maps predicted for blood pheasant in Khangchendzonga Biosphere Reserve using rule based model

7.5 Potential habitat suitability maps predicted for himalayan monal in Khangchendzonga Biosphere Reserve using rule based model

7.6 Potential habitat suitability maps predicted for satyr tragopan in Khangchendzonga Biosphere Reserve using rule based model

7.7 Potential habitat suitability maps predicted for kalij pheasant in Khangchendzonga Biosphere Reserve using rule based model

7.8 Potential habitat suitability maps predicted for snow partridge in Khangchendzonga Biosphere Reserve using rule based model

7.9 Potential habitat suitability maps predicted for hill partridge in Khangchendzonga Biosphere Reserve using rule based model

7.10 Potential habitat suitability maps predicted for blood pheasant in Khangchendzonga BR based on the factor maps derived through Ecological Niche Factor Analysis

7.11 Potential habitat suitability maps predicted for himalayan monal in Khangchendzonga BR based on the factor maps derived through Ecological Niche Factor Analysis

7.12 Potential habitat suitability maps predicted for satyr tragopan in Khangchendzonga BR based on the factor maps derived through Ecological Niche Factor Analysis

7.13 Potential habitat suitability maps predicted for kalij pheasant in Khangchendzonga BR based on the factor maps derived through Ecological Niche Factor Analysis

7.14 Potential habitat suitability maps predicted for snow partridge in Khangchendzonga BR based on the factor maps derived through Ecological Niche Factor Analysis
7.15 Potential habitat suitability maps predicted for hill partridge in Khangchendzonga BR based on the factor maps derived through Ecological Niche Factor Analysis

7.16 Frequency distribution of the niche characteristics for blood pheasant (green) and snow partridge (yellow) in Khangchendzonga BR along the Discriminant factor

7.17 Frequency distribution of the niche characteristics for blood pheasant (green) and himalayan monal (yellow) in Khangchendzonga BR along the Discriminant

7.18 Frequency distribution of the niche characteristics for kalij (green) and satyr tragopan (yellow) in Khangchendzonga BR along the Discriminant

7.19 Frequency distribution of the niche characteristics for hill partridge (green) and satyr tragopan (yellow) in Khangchendzonga BR along the Discriminant

7.20 Frequency distribution of the niche characteristics for monal (green) and snow partridge (yellow) in Khangchendzonga BR along the Discriminant

7.21 Frequency distribution of the niche characteristics for hill partridge (green) and kalij (yellow) in Khangchendzonga BR along the Discriminant