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An assessment of abundance, habitat use and activity patterns of three sympatric pheasants in an Eastern Himalayan Lowland tropical Forest of Arunachal Pradesh, India

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ABSTRACT

Eastern Himalayan biodiversity hotspot is rich in pheasant diversity, as eleven of the seventeen pheasant species in India occur here. Despite the richness, these pheasants have been least studied in their natural habitats and their current population status, ecology and behavioural patterns are unknown. We estimated abundance, habitat use and activity pattern of three pheasants, i.e. Red Jungle Fowl *Gallus gallus* (RJF), Kalij Pheasant *Lophura leucomelanos* (KP) and Grey Peacock Pheasant *Polyplectron bicalcaratum* (GPP) in Pakke Wildlife Sanctuary and Tiger Reserve, Arunachal Pradesh. Data collected from line transects and camera traps were used for estimating abundance, habitat use and activity patterns. Program Oriana 4.2 was used to determine the activity pattern of three species. Questionnaire survey was conducted around the protected area to determine the conservation threats for these species. Red jungle fowl had the highest density of 12.9 individuals/km^2 and a photographic rate of 3.19/100 trap nights among all the pheasants. Shrub cover, litter cover and grass cover were positively associated ($p<0.001$) with pheasant detections, where as disturbance ($p<0.001$) was negatively correlated. 60% of habitat overlap was observed between KP and RJF. *Dillenia indica* dominated habitats were significantly correlated with pheasants detections ($R=0.34$, $p<.0001$). The mean activity of GPP, RJF and KP were 6.30 hrs ± 3.37 hrs, 7.49 hrs ± 0.14 hrs and 8.29 hrs ± 0.18 hrs respectively. Additional studies on current status of these species and management plans are critical for pheasant conservation in this critical biodiversity hotspot.

Key words: Red Jungle Fowl, Kalij, Grey Peacock, Pakke Wildife Sancuary and Tiger Reserve, Eastern Himalaya, habitat use, density, activity pattern