

A Study on the Different Species of Birds Found In Jim Corbett

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ABSTRACT

Point counts is used to estimate the population of avian wildlife in two separate types of forests in the Corbett National Park, Uttarakhand, India area of Serpdelli and Dhikala. A total of 38 plots have been laid randomly, covering both mixed and Sal forest, by four teams of two each for a span of ten days. The density of birds and different bird guilds is calculated by DISTANCE 6.0. SPECIDIVERS also measured income and diversity. A total of 47 mixed species and 27 Sal Forest species have been recorded. The highest densities of plum headed parakeet ($11.63 \pm 2.30/\text{km}^2$) and blue whistling thrush ($0.06 \pm 0.01/\text{km}^2$) respectively were the lowest densities ($\pm SE$) in Sal woodland. The highest density was in mixed wild bee eater chestnut ($13.84 \pm 3.25/\text{km}^2$) and Hoopoe ($0.09 \pm 0.01/\text{km}^2$) and the lowest density. The mixed forests had the largest density, variety and wealth of insectivores ($42,91 \pm 6,27/\text{km}^2$, $0,89 \pm 0,08$ and $3,57 \pm 0,53$, respectively) and omnivores had the highest density of birds ($76,73 \pm 4,23/\text{km}^2$), while those with the most diversity ($\pm SE$) and wealth ($\pm SE$) had the highest density of insectivores ($0,88 \pm 0,14$ and $3,15 \pm 0,49$, respectively). In both Sal ($0.19 \pm 0.08/\text{km}^2$) and mixed forêt ($0.32 \pm 0.12/\text{km}^2$), carnivore birds displayed lower density

KEYWORDS Birds, Corbett, density, diversity, richness

I. INTRODUCTION

For several years now, ornithologists are also using population scales as an indicator of the health of plants (Lack 1954, 1966; Hutchinson 1978). However this research was carried out in Corbett National Park to measure the health of two types of forests.

Corbett National Park (CNP) is one of the finest in the Himalayan region in its pristine flora and fauna. This reserve is the first and most important centre in India to protect biodiversity (Dhakate, Patil & Bhartari 2008). The large range of forest animals, including several unusual species, is often astonishing to tourists. It is a source of surprise and appreciation to see certain animals co-existing with humans in intensely used ecosystems. National Park of Corbett is the sky of a birdwatcher. 40 per cent of the approximately 1300 bird species present in the Indian subcontinent is reported in the CNP (Dhakate et al., 2008). The purpose of this analysis is to (1) compare the densities of various terrestrial birds that use two different forest types (2) and compare the degree to which the particular forest guild chooses a particular forest type (3) and evaluate overall forest types fitness.

A mosaic of dry and moist cedar forests, scrub savannah and alluvial grasslands is the flora of the region. There are five broad-based vegetation communities (Champion and Seth, 1986) distributed within the area: (1) forest with a predominance of Sal (*Shorea robusta*), (2) mixed forest, (3). There are also two other forms of plants, grassland and open buckwheat. The primary and most common species is *S. S. Robusta* followed by *Philippenses Mal-lotus* and *Cumini Syzygium*. Planting forms a large part of the scenery, with *Tectona grandiose* and *Dalbergia sissoo* in particular. The park houses a wealth of biodiversity including 50 mammals, 575 bird species, 33 reptile species and seven amphibian species. The park is home to a large tigre herd (*Panthera tigris*) and a large Asian elephant population (*Elephas maximus*) (Badola et al. 2010).

OBJECTIVES OF THE STUDY

1. To Study On The Different Species Of Birds Found In Jim Corbett
2. To Study on omnivorous birds had highest density and insectivorous birds had highest diversity

Transects, points and territory mapping are the primary methods developed and used in the census of birds (Verner 1985, Bibby, Burgess, & Hill 1992). Many experiments have compared various approaches for assessing their relative accuracy, partiality, precision and ease of implementation in the field to choose the right methodology for a given goal (Ralph & Scott 1981, Verner & Ritter 1985, DeSante 1986).

Point numbers are used for the calculation of the birds' population (Blondel, Ferry and Frochet, 1981), where a line transect is not successful. Counts can be rendered where the field is not accessible topography (Gregory, Gibbons & Donald 2004). A point count or a circle plot survey requires a set of points or stations that count birds.

This study took place for 10 days, from 24 March to 4 April 2008 as part of the Master's programme. The points of view were randomly picked in the Corbett National Park and gathered data in two distinct ecosystems - the mixed forests and salt woods (at least 500 metres separately). Four groups of two students collected the results. Birds have been listed in the position of the observer from 0-360 degrees. Each bird's distance from the point of view is measured and noted by a range finder. The average distance functions as the circular radius from which the field and the bird density are measured. Birds were counted from both habitats and the density of each bird was taken separately for both habitats. The data was gathered in mixed forests (situated near Garjia temple - Serpdullia range and Dhikala-Dhikala range), and in Sal forest (situated near Garjia temple). A total of 38 plots were altered during the time of the research.

Different Species Of Birds Found In Jim Corbett

The park is named after a legendary British chaser, author and naturalist 'Jim Corbett, who was born in Nainital and a tracker-turned conservationist. The writings of Corbett have captivated wildlife enthusiasts of centuries.

In Jim Corbett National Park, there are an outstanding number of both local and migration bird species. *Brown Dipper, Forktails, Wallcreepers, White-Capped Water Redstarts, Gray-Headed Fish-Eagle, Plumbous and many species of Wagtails*.are the migratory birds you can find here. The Park is suitable for keen birdwatchers with this unique species of birds.

You surely should intend to visit it to relieve your thirst for seeing the unusual wildlife. We at Peak Adventure give you a fascinating six-day path to explore Jim Corbett's thrill of birding.

a. Density estimation of birds in Corbett National Park

The DISTANCE 6.0 software measured results. The abundance of mixed tree species was found to be greater than the density of Sal forest species (Table 1a and 1b). There are a total of 47 species in mixed forests, while the Sal Forest has 27 species. For a single species registered separately, the mean distances were determined and their individual densities for both habitats were then traced (Figure 1a & 2b)

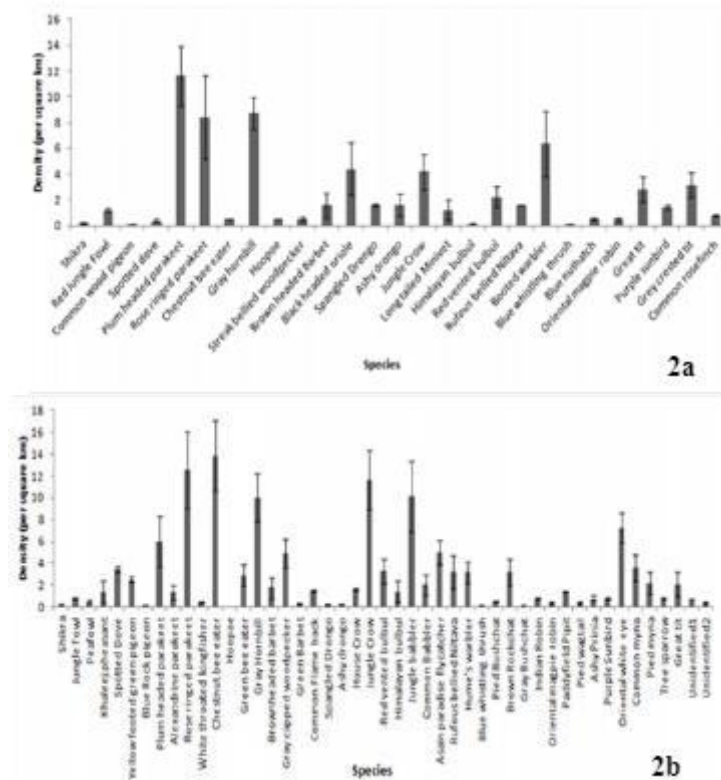


Figure 1 (a & b). Comparison of densities and mean distances of various species of birds in Sal and mixed forest of CTR.

The density of the plum forest (\pm SE) in Sal is higher than that for the Plum (e.g. $11,63 \pm 2,30/\text{km}^2$) and blue whistling thrush (i.e. $0,06 \pm 0,01/\text{km}^2$) in lower density. Whereas chestnut headed bee eater (i.e. $13,84 \pm 3,25/\text{km}^2$) had the greatest density in the mixed woods and Hoopoe (i.e. $0,09 \pm 0,01/\text{km}^2$) was the lowest density.

b. Density, diversity and richness estimates of avian guilds in Corbett national Park

DISTANCE 6.0 was also determined to define the difference in density of birds according to their particular guild type. SPECIDIVERS were used to evaluate the riches and diverse estimates; these values were determined by an updated DOS-based computational ecology module (Ludwing and Reynolds, 1988) (figure 2a and 2b)

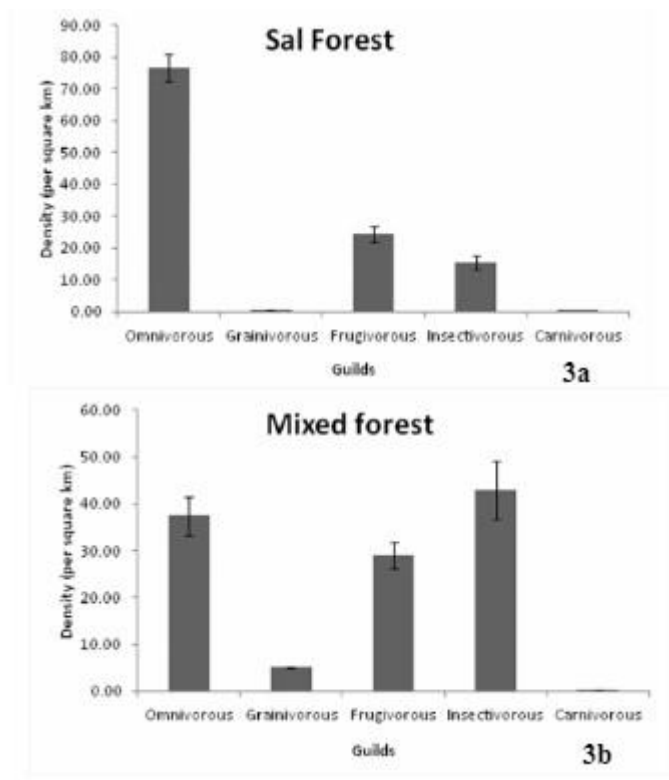


Figure 2. Comparison of guild-wise bird densities in CTR between a) Sal and b) Mixed Forest.

The largest density of insectivorous birds in mixed forests (\pm ES) was $42,91 \pm 6,27/\text{km}^2$; omnivorous birds in Sal forests were higher than others ($76,73 \pm 4,22/\text{km}^2$). In Sal forests. In Sal ($0,19 \pm 0,08/\text{km}^2$) and in combined forests ($0,32 \pm 0,12/\text{km}^2$), carnivorous birds showed lower density. In mixed forests ($0,89 \pm 0,08$ and $3,57 \pm 0,53$, respectively) and sal forests ($0,88 \pm 0,14$ and $3,15 \pm 0,49$) the diversity (\pm SE) and richness (\pm SE) of insectivorous birds is found to be highest than other bird guilds. In Sal Forest, however, carnivore and grain-producing birds ($0,14 \pm 0,13$ and $0,72 \pm 0,28$ re-SPECT), and grain-producing birds in mixed woodland were found to be of lowest density (\pm SE) and wealth (\pm SE) ($0,40 \pm 0,06$ and $0,94 \pm 0,2$)

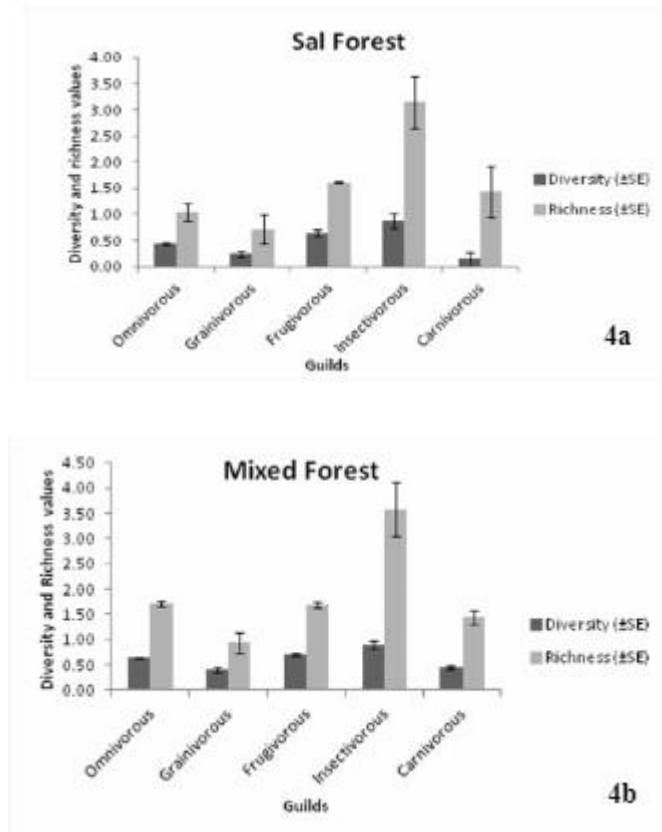


Figure 3. Comparison of guild-wise bird diversity and richness in CTR between a) Sal and b) Mixed Forest.

Structural features derived from various plant compositions in discontinuities may cause significant changes in their livestock population composition (Odum, 1958). Enrichment of related bird populations is most commonly attributed to an increase in diversity and floristic composition of vegetation (Wiens, 1989; Monkkonen, 1994; Hobson & Bayne, 2000a,b; Shochat, Abramsky & Pinshow, 2001; Laiolo, 2002; Machtans & Latour, 2003). Mixed forests along with more reproductive sites have varied habitats for numerous tree species of birds not supplied with pure woodland forests (Diaz, 2006). This study has shown only a few species of specialists used to visit those forests because Sal forest offers a small supply of bird food. Whilst a variety of trees and shrubs occur for the various types of bird guilds in a mixed forest (Diaz, 2006), their density and the higher number of individuals of a single species than the Sal forest are greater.

This present study indicates that a few specialised birds used to frequent these forests because Sal forest has a small bird supply of food. Although in a mixed forest that provides a kind of edge shelter for numerous birds' Guilds, there is a large range of trees and shrubs available (Diaz 2006), the diversity of birds and of individuals of each species is greater than that of the Sal forest.

In both forest types the same species have different densities, as a result of the variation in the presence of their favoured environments or in the abundance of resources. For eg, in the Sal forest, rose ringed parakeets are approximately 8 per kilometre in square density and in a mixed forest 12.55 persons per kilometre are known as generalist species. Similarly, the spangled drongo in mixed forest has a density of about 0.2 people per square kilometre; its density in sal forest is about 1.5 people per square kilometre, as a result of being more a professional than a generalist.

The nature of the Sal forest has been shown to be more permanent fixed patterns and contain more unique species, while the mixed forest has a more varied composition which represents the importance of both types of habitats in a variety of different bird species. Since few species have been found to be unique to the Sal forests, the protection of those species can safely be assumed to be an essential action. Similarly, by supporting many bird species of different guilds, the mixed forest is significant. The removal of any of these habitats may then result in significant harm to the bird diversity of Corbett. Consequently, a proper steps to protect deforestation in these areas must be maintained to prevent the local loss of forest-type plants. Since 54 different types of forests suggesting the stable environment and a significant refuge for these indigenous birds were documented even within this short-term study.

Sl No.	Species	Number of individuals detected (n)	Detection probability (p)	Density (per square km)	Std Error (\pm SE)
36	Oriental magpie robin <i>Copsychus saularis</i>	1	0.30	0.35	0.07
37	Paddyfield Pipit <i>Anthus rufulus</i>	1	0.15	1.42	0.09
38	Pied wagtail <i>Motacilla alba</i>	1	0.30	0.35	0.13
39	Ashy Prinia <i>Prinia socialis</i>	1	0.20	0.80	0.25
40	Purple Sunbird <i>Cinnyris asiaticus</i>	3	0.35	0.78	0.12
41	Oriental white eye <i>Zosterops palpebrosus</i>	8	0.19	7.25	1.35
42	Common myna <i>Acridotheres tristis</i>	25	0.47	3.63	1.21
43	Pied myna <i>Sturnus contra</i>	3	0.21	2.17	0.98
44	Tree sparrow <i>Passer montanus</i>	1	0.20	0.80	0.08
45	Great tit <i>Parus major</i>	2	0.18	2.08	1.07
46	Unidentified1	1	0.20	0.80	0.02
47	Unidentified2	7	0.80	0.35	0.08

Table 1. Number of individuals recorded along with density (\pm SE) per square km, diversity (\pm SE) and richness (\pm SE) of bird species belonging to separate guilds in a Sal forest. Half Normal model was selected depending on the lowest AIC value by program DISTANCE for calculating the density

II.CONCLUSION

Similarly, a variety of bird species from various Guilds endorse the mixed forest. The loss of any habitat could also cause significant harm to the diversity of birds in Cor-bett. A proper management measure to discourage forest destruction in these areas should also be maintained in order to prevent the local extinction of species based on a given type of forest. Since 54 different types of forests suggesting the stable environment and a significant refuge for these indigenous birds were documented even within this short-term study

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