

Revised Avifauna Conservation Plans for Five Developmental Projects in Chhattisgarh



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**REVISED AVIFAUNA CONSERVATION
PLANS FOR FIVE DEVELOPMENTAL PROJECTS IN
CHHATTISGARH**

Final Report submitted to
Chhattisgarh Forest Department



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ABBREVIATIONS

CKTL	: Champa- Kurukshetra Transmission Line
ERL	: East rail Corridor
EWRL	: East-West rail corridor.
KJTL	: Korba – Jabalpur Transmission Line
LI	: Linear Infrastructure
RDTL	: Ranchi Dharamjaygarh Transmission line
Sp.	: Species
TL	: Transmission Line



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(Authors)



EXECUTIVE SUMMARY

The study titled 'Preparation of revised Avifauna Conservation Plans for five developmental projects for Chhattisgarh Forest Department' was awarded to SACON in March 2020. The field surveys could not be initiated soon because of the national lockdown and worsening Covid-19 situation that prevailed then. The field operations were initiated by September 2020 and continued till September 2022 covering five Linear Infrastructure (LI) developmental projects, namely, the Ranchi Dharamjaigarh Transmission line, Korba - Jabalpur Transmission Line, Champa - Kurukshetra Transmission Line, East rail Corridor and East-West rail corridor. Intensive fieldwork was carried out along the five developmental projects in respective forest divisions namely, Janjgir-Champa, Bilaspur, Marwahi, Katghora, Korba, Dharmjaigarh, Jashpur and Raigarh forest divisions. A total of 711 km stretch along the five linear infrastructure projects were surveyed. All the study sites were surveyed twice (Wet and Dry seasons) and the point count method was employed to assess the bird population.

Our field surveys using point-counts and raptor surveys along five Linear Infrastructure projects through the protected areas of eight forest divisions recorded 181 bird species belonging to 61 families. Among the sites, the East-west rail route recorded the highest number of bird species (130 species belonging to 55 families). Followed by Ranchi-Dharamjaigarh (118 species belonging to 49 families), East rail Corridor (106 species belonging to 47 families), Champa- Kurukshetra Transmission Line (92 species belonging to 46 families) and Korba-Jabalpur Transmission Line (86 species belonging to 45 families).

The forest areas in the East-west rail corridor supported maximum bird diversity (Shannon H: 3.72) followed by the Ranchi-Dharamjaigarh Transmission line (Shannon H: 3.65), Korba-Jabalpur power transmission line (Shannon H: 3.57), East rail Corridor (Shannon H:3.51) and Champa- Kurukshetra Transmission Line (Shannon H: 3.49). and also, the impact of these infrastructures on avifauna was computed. The diversity and abundance of birds were found be higher in the forest edged created by the linear



infrastructures, because of the edge effect and the abundance of generalist species. We also recorded 14 species of raptors along the five lines studied. Although we could not observe any instance of direct bird collision with the transmission lines anywhere along the 5 developmental projects during our surveys, the chances of bird collision/electrocution with the powerline are predicted to be higher in the area studied (avistep, accessed 2023). Considering the high bird diversity and good raptor populations along the lines indicate the risk of collision and electrocution.

Vegetation survey and quantification along the five developmental projects recorded 219 species of plants. Among them were 55 species of trees, 24 shrubs and 140 herbs and grasses. Among the areas studied, Ranchi-Dharamjaigarh Transmission line route supported the highest number of plant species (132 sp.) among them 31 species were trees, 14 sp. shrubs, 87 sp. herbs and grasses. Followed by the East rail corridor (120 sp.) 29 sp. Trees, 12 sp. shrubs 79 sp. herb and grasses, Champa- Kurukshetra Transmission Line (115 sp.) 28 sp. Trees, 13 sp. shrubs 74 sp. herb and grasses, Korba–Jabalpur power transmission line (114 sp.) 25 sp. Trees, 8 sp. shrubs 81 sp. herb and grasses and East-west rail corridor (114 sp.) Trees 31, 12 sp. shrubs 71 sp. herb and grasses. It is evident that the area is rich in plant species diversity.

Linear structures can support the long-distance dispersal of invasive species and act as important reservoirs for invasive species. From our study area, we recorded several invasives. Especially along the route of Ranchi-Dharamjaigarh Transmission line (Korba, Dharamgaigarh and Jashpur forest divisions), Champa-Kuruketra Transmission line (Bilaspur and Marwashi forest divisions) and the East-west rail corridor (Katghora & Marwahi forest divisions), the shrub cover was dominated by invasive species such as *Lantana Camara* and *Chromolaena odorata*. Which will result in low habitat value and alteration of habitat affecting the availability of food and cover for local wildlife. Management of invasive species must be taken up to maintain habitat quality for avifauna and other wildlife. Linear structures can also positively impact bird numbers in short-term, but these are not sustainable in the long run and habitat specialists and other conservation priority species will be negatively affected. It should be noted that because of large extents of the study areas to be covered, the present study focused



on the effect of power lines and railway lines on bird presence and abundance only, and not on breeding success or other ecological aspects.

Detailed management recommendations for the avifauna conservation and related habitat management guidelines in connection with five developmental projects are given in a separate chapter. If the linear infrastructure corridor were not properly managed, Habitat loss and fragmentation can result in the removal or degradation of critical bird habitats, leading to declines in bird populations. It is important to consider the potential negative impacts of linear infrastructure on bird populations and to implement best possible measures to minimize it, such as selecting lower-impact routes in the future, using bird-friendly infrastructures, installing anti-collisions devices and restoring degraded habitats back to its natural state through appropriate management intervention.