

## CHAPTER 12

# A Survey of Grassland Birds and Conservation Challenges in Dhule (M.S.)

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### Abstract

The grassland ecosystems in the Dhule region of Maharashtra play a crucial role in preserving biodiversity, especially when it comes to a diverse community of grassland birds. The objective of this survey was to evaluate the present situation of these birds, the challenges they encounter, and the possibilities for their protection. The present study was carried out over an extensive period, covering various grassland habitats. The research employed a combination of field surveys, acoustic monitoring, and data analysis. The outcomes revealed a wealth of avian diversity, including numerous endangered and endemic grassland bird species. Belt transect sampling was utilized to record a total of 39 grassland-dependent birds were identified from 16 families and 06 orders, were recorded during study period. These included 27 resident birds, 11 winter migratory birds, and 1 local migrant. Regrettably, the avian populations in question confront significant challenges, including the loss and degradation of their habitats, as well as human-induced disturbances. Urbanization, agricultural expansion, and infrastructure development emerge as major threats to the grassland birds in Dhule region, primarily leading to the destruction of their habitats. The encroachment of invasive species further worsens this problem. Long-term threats such as climate change also have an adverse impact, altering resource availability and disrupting the dynamics of these ecosystems.

**Keywords:** Ecological survey, Avian diversity, Grassland, encroachment, Dhule

### Introduction

India's grasslands are commonly ignored. Unfortunately, because governments and conservation initiatives have not paid enough attention to these ecosystems, they have been marginalized and are not supported (Rahmani 1988, 1997). A wide range of grassland ecosystems are presented in the current study, which was conducted between January 2022 and December 2022 across a variety of grasslands in the northern Maharashtra region

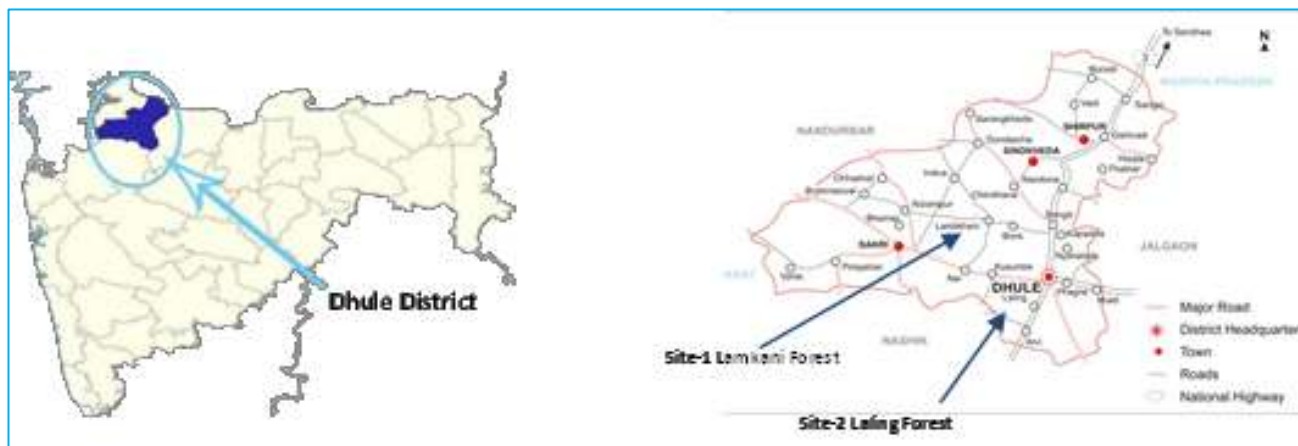
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known as Dhule. These habitats are home to an impressive population of grassland birds. Grasslands, sometimes overlooked, are vital to biodiversity because they offer vital habitats for a wide range of species, including several bird species. These bird species have added to the district's high biodiversity and ecological balance by adapting to the unique and constantly shifting grasslands environment. However, these birds will face numerous challenges to survival as long as human activity continues to expand upon and change natural grasslands. It is crucial to comprehend the state of grassland birds in the Dhule region, the threats they confront, and the challenges associated with their preservation. The primary goal of this survey is to gather crucial data about the conservation of grassland birds in the Dhule. It clarifies the challenges and possibilities for the preservation and conservation of these species. In India, grasslands often find themselves in a state of neglect, as they are frequently subjected to excessive grazing or classified as barren lands requiring reforestation efforts. The biggest danger to bird populations worldwide has been identified as agriculture (Green et al., 2005). Unfortunately, these ecosystems have received minimal attention within governmental and conservation strategies, leaving them marginalized and underserved. (Rahmani 1988, 1997). These avian species have adapted to the unique and dynamic conditions of the district's grasslands, contributing not only to its ecological balance but also to the rich tapestry of biodiversity in the region. As human activities continue to encroach upon and modify these grasslands, the survival of these birds faces an array of challenges. Understanding the status of grassland birds in Dhule, the threats they confront, and the possibilities for their conservation is of paramount importance. This survey endeavors to shed light on these vital aspects, offering insights into the challenges that these birds encounter and the opportunities that exist for their protection and preservation. Many biotic and abiotic factors can affect species interactions, distribution, and abundance within a given ecosystem (McParland and Paszkowski, 2007). The avian fauna are essential for controlling insects, spreading seeds, and even serving as health markers for these delicate ecosystems. In-depth investigation of the grassland birds of Dhule is undertaken in this study, which also aims to assess the birds current situation, pinpoint the threats to their survival, and provide recommendations for improving the conservation of these avian communities.

## Materials and Methods



**Fig: 1: Map Showing the study area Fig: 2 Map Showing Different location of study area**

The present study was carried out at two different sites i.e. (Site-1 Lamkani forest and Site -2 Laling forest) from January 2022 - December 2022 to reveal the status of grassland birds of Dhule region. A visual encounter survey was conducted (Joshi, 2014) for a direct count of the birds by walking along the bank of the lake (Rajashekara and Venkatesha, 2010). Weekly visits to the site were made for one year and an average of 4 weeks was accounted for a month (Wanjari, 2012). The observation of the birds was carried out in the early morning and evening hours by using field binoculars (Olympus 8×40) during the daytime depending on the light conditions (Namgail et al., 2009). The stationary and double counting methods were also adopted wherever necessary

(Gregory et al., 2004). The information gathered from each survey was examined to determine the bird species abundance status based on the percentage frequency (encounter rates) of sightings, using methods created by Kasambe and Wadkar (2007), Tak et al. (2010), and Priyanka (2012). Described as Very common (Vc): 75–100%, common (C): 50–74%), uncommon (Uc): 25–49%, occasional (O): 5–24%, and rare (Rr): < 5%.

### Results and Discussion

During the study period, 39 different species of birds were identified from the grasslands in the Dhule region. The 16 families and 06 major orders comprise the recorded species of birds: Alaudidae (08), Motacillidae (07), Cisticolidae and Estrildidae (04), Phasianidae (03), Accipitridae, Acrocephalidae, and Ploceidae (02 species from each family); the remaining families include one species each of Burhinidae, Charadriidae, Glareolidae, Columbidae, Emberizidae, Laniidae, and Paradoxornithidae and one species each of the other families.

Order	Family	Biological Name	English Name	Status	Occur
Accipitriformes (5.12 %)	Accipitridae	<i>Elanus caeruleus</i>	Black-shouldered Kite	R	A
		<i>Circaetus gallicus</i>	Short-toed Snake Eagle	R	U
Caprimulgiformes (2.56 %)	Caprimulgidae	<i>Caprimulgus mahrattensis</i>	Syke's Nightjar	wM	Rr
Charadriiformes (2.56 %)	Burhinidae	<i>Burhinus indicus</i>	Indian Stone Curlew	R	U
Columbiformes (7.69 %)	Charadriidae	<i>Vanellus malabaricus</i>	Yellow-wattled Lapwing	R	C
	Glareolidae	<i>Cursorius coromandelicus</i>	Indian Courser	LM	U
	Columbidae	<i>Spilopelia senegalensis</i>	Laughing Dove	R	A
Galliformes (7.69 %)	Phasianidae	<i>Coturnix coturnix</i>	Common Quail	R	A
		<i>Francolinus pondicerianus</i>	Grey Francolin	R	C
		<i>Coturnix coromandelica</i>	Rain Quail	R	O
Passeriformes (74.35 %)	Acrocephalidae	<i>Iduna caligata</i>	Booted Warbler	wM	O
		<i>Acrocephalus agricola</i>	Paddyfield Warbler	wM	O
	Alaudidae	<i>Eremopterix griseus</i>	Ashy-crowned Sparrow-Lark	R	A
		<i>Mirafra erythroptera</i>	Indian Bushlark	R	A
		<i>Ammomanes phoenicura</i>	Rufous-tailed Lark*	R	A
		<i>Mirafra cantilans</i>	Singing Bushlark	R	C
		<i>Galerida deva</i>	Sykes's (Tawney) Lark*	R	C
		<i>Alauda gulgula</i>	Oriental Skylark	R	O
		<i>Galerida cristata</i>	Crested Lark	R	Rr
		<i>Calandrella brachydactyla</i>	Greater Short-toed Lark	wM	U
	Cisticolidae	<i>Prinia inornata</i>	Plain Prinia	R	A
		<i>Prinia sylvatica</i>	Jungle Prinia	R	C
		<i>Cisticola juncidis</i>	Zitting Cisticola	R	O
		<i>Prinia socialis</i>	Ashy Prinia	R	A
	Emberizidae	<i>Emberiza buchanani</i>	Grey-necked Bunting	wM	O
		<i>Euodice malabarica</i>	Indian Silverbill	R	A
	Estrildidae	<i>Lonchura striata</i>	White-romped Munia	R	Rr
		<i>Lonchura malacca</i>	Tricolored Munia	R	U
	Laniidae	<i>Lanius vittatus</i>	Bay-backed Shrike	R	A
		<i>Anthus rufulus</i>	Paddyfield Pipit	wM	A
Motacillidae	<i>Anthus godlewskii</i>	Blyth's Pipit	wM	O	
	<i>Anthus campestris</i>	Tawny Pipit	wM	O	
	<i>Anthus trivialis</i>	Tree Pipit	wM	O	
	<i>Anthus similis</i>	Long-billed Pipit	wM	U	
	<i>Anthus richardi</i>	Richard's Pipit	wM	U	
	<i>Saxicola caprata</i>	Pied Bush-Chat	R	C	
	Paradoxornithidae	<i>Chrysomma sinense</i>	Yellow-eyed Babbler	R	C
Ploceidae	<i>Ploceus philippinus</i>	Baya Weaver	R	A	
	<i>Ploceus benghalensis</i>	Black-breasted Weaver	R	Rr	

**Occurrence:** Abundant (A); Common (C); Uncommon (U); Rare (Rr), O: Occasional  
**Status:** Resident (R), Winter Migratory (wM), Local Migratory (LM);

Of the total number of species found, 11 were migratory, 01 were resident or local migrants, and 27 were resident breeders. Throughout the study period, a variety of bird species were observed, each with a unique feeding habit. These included insectivores, granivores, carnivores, piscivores, frugivores, and omnivores. There are two main types of grasslands in the current study region, and they differ in terms of bird diversity and composition. The results' specifics are addressed here. The region's abundance of biological niches and habitats, which provide the basis for the survival of numerous bird species, is demonstrated by the prevalence of Passeriformes (74.35%). Developing accurate conservation measures requires a deeper understanding of the complex needs of Passeriformes. Developing focused strategies is critical to guaranteeing the long-term survival of this powerful bird order, recognizing its critical role in maintaining the complex equilibrium of the surrounding environment. On the other hand, the presence of Charadriiformes (2.57%), Accipitriformes (5.12%), and Caprimulgiformes (5.5%), despite their comparatively lower percentages, highlights the ecological diversity that exists naturally in the Dhule region. The importance is not limited to the numerical depiction; it also includes the identification of many ecosystems. Therefore, conservation efforts must to be customized to meet the unique demands outlined in these directives. Moreover, the remarkable prevalence of Galliformes and Columbiformes (7.69 %) in the area may be significant for the general condition of Dhule's terrestrial ecosystems. Given the significance of the order Columbiformes and Galliformes, conservation efforts ought to focus on preserving appropriate habitat for these avian species. Livestock grazing, the primary cause of ecological disturbance in grassland environments, can have a direct effect on bird populations through nest trampling, changes in the availability of food, or adjustments to the pressure from predators (Barzan et al., 2021). Such programs, which concentrate on the special requirements of both orders, have the potential to significantly advance the Dhule region's comprehensive avian biodiversity preservation. In summary, we may promote a thorough and successful strategy for preserving the diverse birdlife that enhances Dhule's biological landscape by comprehending and attending to the various needs of each bird order.

## Conclusion

In Dhule District, India, the grassland ecosystems are vital to maintaining biodiversity, especially since they provide as a haven for a wide variety of grassland birds. This thorough survey has shown a great diversity of grassland birds, including endemic and vulnerable species, and has given important insights into the state of these bird species. The results also draw attention to the significant obstacles that these birds must overcome, such as habitat loss and degradation as well as human-caused disturbances brought on by infrastructural development, agricultural growth, and urbanization. The challenges faced by these birds are made more onerous by the invasion of invasive species and the impending threat of climate change. In order to create conservation plans that will effectively protect grassland birds in Dhule in the future, it is imperative that these problems be acknowledged.

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