

FAUNAL DIVERSITY OF CHANDOLI NATIONAL PARK, WESTERN GHATS, MAHARASHTRA STATE, INDIA

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ABSTRACT

Biodiversity refers to the variety among living organisms. The diversity of species involves genetic diversity, habitat diversity and species diversity. Biodiversity of Western Ghats is one of the most significant in the world, internationally declared as world heritage. Chandoli National Park is heart of Western Ghats. National Park spreads along the crest of the North Sahyadri Range of Western Ghats. Faunal diversity of National Park was studied in period 2010 to 2012. There are 4 species of amphibians, 17 species of reptiles, 109 species of birds and 23 species of mammals. The Simpsons Index was much more in amphibian (12.75) than birds (0.01) but Simpson's diversity Index (0.9) and reciprocal index was very high in birds (77.51) than amphibians (0.07). Among observed species some are endangered species such as Tiger, Leopard, Sloth bear, Mouse deer, Indian Giant squirrel, Indian Pangolin, Sambar, Indian Rock Python, Monitor lizard, Common grey horn bill and Brahminy kite. Line transect survey and direct observation method was used for this study.

Key words : Chandoli National Park, Diversity, Fauna, Western Ghats.

INTRODUCTION

Biodiversity is the variety of all the genes, species and ecosystem which are found on our planet. It includes micro-organism, plant and animal wildlife and the water, land and air in which they live and interact. It is natural biological capita of the earth. World biodiversity is generally divided into three basic parts genetic diversity, species diversity and ecosystem diversity. Species diversity is measured in relation to given area from a small field to the entire planet. It can be assessed in terms of the number of species, of the range different types of species an area can contain.

The major threats to biological diversity are the destruction of ecosystem and disappearance of habitats, industrial development, dams, pollution, and erosion. A large number of

species are also threatened by over hunting, poaching. During the last decade the Zoological Survey of India focuses on Eastern State of India, Andaman fauna, South Western Ghats fauna, fauna of Gujarat and fauna of Goa (2000 to 2008). Fauna of Sanjay Gandhi National Park (2006), North Western Ghats fauna (Bharucha and et al., 2010). Globally threatened Indian fauna (Kumar and Khama, 2006). Faunal resources in India (Alfred, Das and Sanyal, 1998) and fauna of Bhimashankar Wild life Sanctuary (Abdar, 2013 and Mahabal, 2009).

The Western Ghats is rich hot spot of biodiversity. Internationally it was known as world heritage. The Chandoli National Park is heart of Western Ghats. Chandoli damp and several manmade lakes in and around this area are interconnected to each other, Western tropical hill forest, semi-evergreen forest, moist

mixed deciduous forest and Anjani, Jambhul, Pisa are most common species of this area. These conditions may be suitable for increasing faunal diversity therefore present work was undertaken to study faunal diversity of Chandoli National park in Western Ghats.

MATERIAL AND METHODS

Study Area:

The newly formed habitat of Chandoli National park is at the junction area of four district (Sangli, Kolhapur, Satara and Ratnagiri) of Western Maharashtra. It lies within the latitudinal and longitudinal range of 17⁰-03'-29"N and 73⁰- 03'-29" E. A most distinct feature of this is the presence of numerous barren rocky lateritic plateaus locally called 'Sadas' devoid of any perennial vegetation and numerous fallen boulders with dense thorny secondary vegetation.

The area is about 308.97 Sq.km. The maximum temperature range during day time is in between 30⁰C to 38⁰C. The temperature range prevails in between 18⁰C to 22⁰C. After October both day and night temperature decreases progressively.

December and January are the coldest month. In December or January the temperature often raise to 26⁰C in Day time. During rainy season maximum and minimum temperature range remains in between 28⁰C to 11⁰C. The area prevails humid and moderate climate, heavy rain are during the South West monsoon season which sets in June to September. Premonsoon starts in April. Therefore this area has no notable dry season.

The cold season is from December to February. This followed by the pleasant summer season from March to May. The forest types are tropical hill forest, semi- evergreen forest and mixed deciduous forest. Anjani, Jambhual and Pisa are the most common species of this area. Due to high altitude, perennial nallas, reservoir and presence of evergreen vegetation the climatic conditions prevail here are cool and humid. These conditions provide good habitat to wild fauna.

Methods:

Some of the basic methods like field survey by visual encounter, by camera trapping and plot and transect survey, recording species through the indirect evidence like shell, molt and footprints. The point counts as described by Bibby *et al.* (1992). The Point counts: to determine abundance by undertaking a bird count from a fixed location for fixed period of time. The bird species seen or heard are recorded and Line transects method. Data analysis by using Simpson index (D) and Simpsons Reciprocal index (1/D).

RESULTS AND DISCUSSION

The newly formed habitat of Chandoli National park is at the junction area of four districts (Sangli, Kolhapur, Satara and Ratnagiri) of Western Maharashtra. It lies within the latitudinal and longitudinal range of 17⁰-03'-29"N and 73⁰- 03'-29" E. A most distinct feature of this is the presence of numerous barren rocky lateritic plateaus locally called 'Sadas' devoid of any perennial vegetation and numerous fallen boulders with dense thorny secondary vegetation.

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the most common species of this area. Due to high altitude, perennial nallas, reservoir and presence of evergreen vegetation the climatic conditions prevail here are cool and humid. These conditions provide good habitat to wild fauna.

Table-1. List of species occurs in Chandoli National National Park (2010-2012)

Name of Species	Scientific name
Amphibians	
Bronze Frog	<i>Lithobatesclamitans</i>
Cricketer Frog	<i>Acrisgryllus</i>
Skipper Frog	<i>Euphlyctiscyanophlyctis</i>
Buffo	<i>Bufokoinayensis</i>
Reptiles	
Calotes	<i>Calotesjerdoni</i>
Bark Gecko	<i>Bunopustuberculates</i>
Dwarf Gecko	<i>Cnemaspisindica</i>
Rock Gecko	<i>Cnemaspis</i>
KeelbackBeddome s	<i>Amphiesmabeddomei</i>
Common Indian Lizard	<i>Calotesgrandisqamis</i>
Common Indian Monitor	<i>Varanusbengalensis</i>
Skink Snake	<i>Ablepharuspannonicus</i>
Checkered Keelback Snake	<i>Xenochrophispiscator</i>
Common Cat Snake	<i>Boigadendrophila</i>
Indian Python	<i>Python molurus</i>
Dhamen	<i>Ptyasmucosus</i>
Indian Cobra	<i>Najanaaja</i>
Hump-nosed Pit Viper	<i>Hypnalehypnale</i>
Saw-Scaled Viper	<i>Echiscarinatus</i>
Birds	
Black Baza	<i>Avicedaleuphotes</i>
Jungle Babbler	<i>Turdoidesstriatus</i>
Common Babbler	<i>Turdoidescaudatus</i>
Yellow-billed Babbler	<i>Turdoidesaffinis</i>
Indian Scimitar Babbler	<i>Pomatorhinushorsfieldii</i>
Yellow-eyed Babbler	<i>Chrysommasinense</i>
Quaker Babbler	<i>Alcippepoioicephala</i>

Spotted Babbler	<i>Pellorneumruficeps</i>
Rufous Babbler	<i>Turdoidessubrufus(E)</i>
White-checked Barbet	<i>Megalaimaviridis(E)</i>
Coppersmith Barbet	<i>Megalaimahaemacephala</i>
Green Bee-eater	<i>Meropsorientalis</i>
Erasion Black bird	<i>Turdusmerula</i>
Black bird	<i>Hypsipetesleucocephalus</i>
Red-vented Bulbul	<i>Pycnonotuscafer</i>
Red-whiskered Bulbul	<i>Pycnonotusjocosus</i>
Crested Bunting	<i>Melophuslathami</i>
White-eyed Buzzard	<i>Butasturteesa</i>
Honey Buzzard	<i>Pernisptilorhyncus</i>
Common Stonechat	<i>Saxicolatorauata</i>
Pied Bushchat	<i>Saxicolacaprata</i>
Greater Coucal	<i>Centropussinensis</i>
Large-billed Crow	<i>Coruusmacrohynchos</i>
Pied Cuckoo	<i>Clamatorjacobinus</i>
Eurasian Thick-knee	<i>Burhinusoedicnemus</i>
Laughing Dove	<i>Streptopeliasenegalensis</i>
Oriental Turtle Dove	<i>Streptopeliaorientalis</i>
Emerald Dove	<i>Chalcophapsindica</i>
Ashy Drongo	<i>Dicrurusleucophaeus</i>
Black Drongo	<i>Dicrurusmacrocerus</i>
White-billed Drongo	<i>Dicruruscaerulescens</i>
Crested Serpent Eagle	<i>Spilornischeela</i>
Ashy-crowned Sparrow Lark	<i>Eremopterixgrisea</i>
Black-crowned Sparrow Lark	<i>Eremopterixnigriceps</i>
Plain Flowerpecker	<i>Dicaeumconcolor</i>
Thick-billed Flowerpecker	<i>Dicaeum agile</i>
Pale-billed Flowerpecker	<i>Dicaeumerythrorhynchos</i>
Asian paradise-flycatcher	<i>Terpsiphoneparadisi</i>
Redbreasted Flycatcher	<i>Muscicapaparva</i>

Verditer Flycatcher	<i>Muscicapathalassina</i>	Rock Pigeon	<i>Columba livia</i>
White-throated Fantail	<i>Rhipiduraalbicollis</i>	Nilgiri wood Pigeon	<i>Columba elphinstonii</i>
White-browed Fantail	<i>Rhipiduraaureola</i>	Chestnut-shouldered Petronia	<i>Petroniaaxanthocollis</i>
Grey Junglefowl	<i>Gallus sonneratii</i>	Indian Peafowl	<i>Pavocristatus</i>
Changeable Hawk Eagle	<i>Spizaetuscirrhatus</i>	Long-billed Pipit	<i>Anthussimilis</i>
Indian Pond Heron	<i>Ardeolagrayii</i>	Paddy field Pipit	<i>Anthusrufulus</i>
Common Hoopoe	<i>Upupaepops</i>	Tree Pipit	<i>Anthustrivialis</i>
Indian Pied Hornbill	<i>Anthracerosmalabaricus</i>	Rock Bush Quail	<i>Perdiculaargoondab</i>
Common Kingfisher	<i>Alcedoatthis</i>	Rain Quail	<i>Coturnixcoromandelica</i>
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	Common Rosefinch	<i>Carpodacuserythrinus</i>
Black Kite	<i>Milvusmigrans</i>	Common Sandpiper	<i>Actitishypoleucos</i>
Black-shouldered Kite	<i>Elanuscaeruleus</i>	Bay-backed Shrike	<i>Laniusvittatus</i>
Red-wattled Lapwing	<i>Vanellusindicus</i>	Long-tailed Shrike	<i>Laniusschach</i>
Yellow-wattled Lapwing	<i>Vanellusmalabaricus</i>	Common Wood Shrike	<i>Tephrodornispondicerianus</i>
Malabar lark(Crested)	<i>Galeridamalabarica</i>	House Sparrow	<i>Passer domesticus</i>
Vernal Hanging Parrot	<i>Loriculusvernalis</i>	Red Spur fowl	<i>Galloperdixspadicea</i>
Laggar Falcon	<i>Falco jugger</i>	Crimson-backed Sunbird	<i>Nectarinia minima</i>
Dusky Crag Martin	<i>Hirundoconcolor</i>	Crimson Sunbird	<i>Aethopygasiparaja</i>
Sand Martin	<i>Ripariariparia</i>	Purple Sunbird	<i>Nectariniaasiatica</i>
White-billiedMinivet	<i>Pericrocotuserythropygius</i>	Red-rumped Swallow	<i>Hirundodourica</i>
Himalayan Quail	<i>Ophrysiassuperciliosa</i>	Wire-tailed Swallow	<i>Hirundosmithii</i>
Scarlet Minivet	<i>Pericrocotusflammeus</i>	Crested Tree Swift	<i>Hemiprocnecoronata</i>
Black-throated Munia	<i>Lonchurakelaarti</i>	House Swift	<i>Apusaffinis</i>
Indian Silverbill	<i>Lonchuramalabarica</i>	Alpine Swift	<i>Tachymarptis melba</i>
White-rumped Munia	<i>Lonchurastrata</i>	Common Tailorbird	<i>Orthotamussutorius</i>
Common Iora	<i>Aegithinatiphia</i>	Black-lored Tit	<i>Parusxanthogenys</i>
Eurasian Golden Oriole	<i>Oriolusoriolus</i>	White-rumped Vulture	<i>Gyps bengalensis</i>
Jungle Myna	<i>Acridotheresfuscus</i>	Long-billed Vulture	<i>Gyps indicus</i>
Barn Owl	<i>Tyto alba</i>	Yellow Wagtail	<i>Motacillaflava</i>
Spotted Owlet	<i>Athenebrama</i>	Grey Wagtail	<i>Motacillacinerea</i>
Blossom-headed Parakeet	<i>Psittaculacrosea</i>	Booted Warbler	<i>Hippolaiscaligata</i>
Rose-ringed Parakeet	<i>Psittaculakrameri</i>	Streaked fantail Warbler	<i>Cisticolajuncidis</i>
		Large-billed leaf Warbler	<i>Phylloscopusmagnirostris</i>
		Greenish Warbler	<i>Phylloscopustrochiloides</i>
		Oriental White-eye	<i>Zosteropsalpebrosus</i>

Plain Wern-Warbler	<i>Priniasubflava</i>
Ashy Wern Warbler	<i>Priniasocialis</i>
Jungle Wern Warbler	<i>Priniasylvatica</i>
Mammals	
Sloth Bear	<i>Melursusursinus</i>
Indian Wild Boar	<i>Susscrofa</i>
Jungle Cat	<i>Felischaus</i>
Indian Small Civet	<i>Viverriculaindica</i>
Barking Deer	<i>Muntiacusmuntjak</i>
Common Fox	<i>Cerdocyonthous</i>
Mice Deer	<i>Peromyscusmaniculatus</i>
Indian Wild Dog	<i>Cuonalpinus</i>
Indian Bison	<i>Bosgaurus</i>
Short nosed fruit Bat	<i>Cynopterus sphinx</i>
Striped Hyaena	<i>Hyaenastrata</i>
Indian Hare	<i>Lepusnigricollis</i>
Jackal	<i>Canisaureus</i>
Common Langur	<i>Presbytis entellus</i>
Leopard Cat	<i>Prionailurus bengalensis</i>
Leopard	<i>Pantherapoudus</i>
Macaque Bonnet	<i>Macacaradiata</i>
Mongoose	<i>Herpestesfuscus</i>
Indian Pangolin	<i>Maniscrassicaudata</i>
Indian Porcupine	<i>Hystrixindica</i>
Sambar	<i>Rusa unicolor</i>
Indian Giant Squirrel	<i>Ratufaindica</i>
Tiger	<i>Pantheratigris</i>

Common Indian Lizard	√	
Common Indian Monitor		√
Skink Snake		√
Checkered Keelback Snake		√
Common Cat Snake		√
Indian Python		√
Dhamen	√	
Indian Cobra	√	
Hump-nosed Pit Viper		√
Saw-Scaled Viper		√
Birds		
Black Baza		√
Indian Scimitar Babbler	√	
Coppersmith Barbet	√	
Green Bee-eater	√	
Erasion Black bird		√
Black bird		√
Crested Serpent Eagle		√
Grey Junglefowl	√	
Changeable Hawk Eagle		√
Dusky Crag Martin		√
Barn Owl		√
Spotted Owlet	√	
Red Spur fowl	√	
White-rumped Vulture		√
Long-billed Vulture		√
Mammals		
Sloth Bear		√
Indian Wild Boar	√	
Jungle Cat	√	
Indian Bison	√	
Striped Hyaena	√	
Jackal		√
Common Langur		
Leopard Cat		√
Leopard		
Macaque Bonnet	√	
Indian Pangolin	√	
Indian Porcupine	√	
Tiger		√

Table-2. Status of Species found in Chandoli National Park (2010-2012)

Name of Species	Sightings	
	Common	Rarely
Amphibians		
Bronze Frog	-	√
Cricket Frog		√
Skipper Frog		√
Buffo	-	
Reptiles		
Calotes	√	
Bark Gecko	√	
Dwarf Gecko		√
Rock Gecko	√	
KeelbackBeddomes		√

CONCLUSION

The Chandoli National Park is heart of Western Ghats. Western tropical hill forest, semi-evergreen forest, moist mixed deciduous forest. We conclude that Chandoli National Park contain huge faunal diversity The Simpsons Index was much more in amphibian (12.75) than

birds (0.01) but Simpson's diversity Index (0.9) and reciprocal index was very high in birds (77.51) than amphibians (0.07). Among observed species some are endangered species such as Tiger, Leopard, Sloth bear, Mouse deer, Indian Giant squirrel, Indian Pangolin, Sambar, Indian Rock Python, Monitor lizard, Common grey horn bill and Brahminy kite. We must conserve and protect this faunal diversity for human life and environment.

ACKNOWLEDGEMENTS

The Kolhapur (Wild life) and Chandoli (Wild life) department is gratefully acknowledged for granting me the permission to study the diversity. This study was funded by a grant in aid of minor research project from University Grants Commission Pune.

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DOI: <https://dx.doi.org/10.5281/zenodo.7205188>
Received: 3 April 2014;
Accepted; 20 May 2014;
Available online : 11 June 2014