

# Biodiversity of Malkhed Reserve Forest, Amravati, Central India.

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## ABSTRACT

The different types of ecosystems interact amongst each other, thus holding the diverse life on earth. Once such major terrestrial ecosystem is the forest. Existence of forest and human being is interdependent. Exploitation of forest minimizes the values and standards of being a human. The major forest in Amravati district are Melghat, Pohara and Malkhed. Malkhed forest reservoir was undertaken for the biodiversity study. The Malkhed forest region is the home of more than 20 bird species. Chinkara, Nilgai, Chital and Wild boar, are the common mammals inhabiting the forest. Leopard is suspected. It has been seen during the survey that *Lantana camara*, *Acacia sp.*, *Butea monosperma*, *Pongamia pinnata* etc are the dominating flora of Malkhed forest. They seem to be preventing the growth of other species. The soaring human and cattle population have extreme pressure on ecosystem. It decreases the flora and fauna of forest. The stone crusher plants, highway, transportation and tourism within the forest have degrading the forest ecosystem. Now there is the need to improve and increment of forest cover.

**Keywords:** Biodiversity, Malkhed, Reserve Forest, Amravati, India.

## INTRODUCTION

India is rich in both flora and fauna and is a mega diverse country. Biological diversity of our country is rich and puts it amongst the important biogeography regions of the world. India has been divided and identified on the basis of its 13 biogeography regions.

Forests are the complex ecosystems which are the heart of life and its existence. The annual rainfall pattern varies from the minimum of 100 mm in Thar desert and maximum of 5000 mm in Cherapunji region. Near about One Lakh Twenty Seven Thousands (1,27,000) species of flowering plants, Seventy Five Thousand (75,000) species of animals are found in different regions and experts are the opinion that Four Lakh (4,00,000) species are yet to be explored and identified amongst which maximum are the micro-organisms and invertebrates.

Maharashtra is one of the most industrialized states of the Indian union. It is located in the upper Indian peninsula. It was founded on 1<sup>st</sup> May 1960 as a result of the reorganization of Indian states. In production as well as size, it is the third largest state of the Indian union. The state is very rich with more than 500 species recorded from the state so far. If the subspecies are to be considered then the list goes beyond 540. The resident species 255, Local or International migrants 245, Stragglers or irregular visitor 40, species known to be probably breeding 168, species that breed in specific area only 56, species about whom 87, species about which knowledge is 25 fairly good e.g. Sparrows, Cows etc. the commonest bird in the state is the ubiquitous Jungle Crows (*Corvus macrorhynchos*), which is found in remotest forest patches in Gadchiroli district to the heart of the Mumbai city. The other commoner and abundant birds are the House crow, House Sparrow, Rock Pigeon, Common Myna, Black Kite, Red Vented and Red Whiskered Bulbuls. Yellow Footed Green Pigeon (*Treron apicauda*) is the State Bird of Maharashtra.

Vidarbha region is placed to the Northern East part of Maharashtra, The studies are located at 20°31' and 21°06' Northern longitude and 16°37' and 78°27' Eastern Latitude. According to Champion and Seth's classification. Vidarbha's forest is a tropical dry deciduous forest belonging to the Satpuda ranges. Climatic conditions are with warmer, dry summers and colder winter. Temperature ranges between 41°C to 12°C and it goes below 4°C in some regions like Chikhaldara, Dharni etc. Annual rainfall ranges between 858.7 mm to 1200 mm. Soil is highly basaltic black cotton and lomy clay type. Lack of major rivers forces to the increased ground water and well water consumption.

In Vidarbha, protected forests, grassland pockets, number of water bodies and agriculture crop patterns has maintained the great diversity of avifauna. Forests in Vidarbha occupy about 31.60% of the total area of

Maharashtra state forest. The forest types found in the area are classified as the sub-tropical hill forest, Tropical Moist Deciduous Forest and Lush Green Deciduous Forest[1]. Vidarbha has three main seasons: the wet monsoon and post monsoon from June to October, the cool dry winter, from October to March and the hot dry season from March till the onset of rains. Temperature of Vidarbha ranges from minimum of 12°C- 25°C to a maximum of 30°C- 48°C with the relative humidity varying from 10-15% to 60- 95%. Annual precipitation is 1000 - 1700 mm and about 90% of the precipitation is in four months, i.e. from June to September. In the soils of Amravati and nearer forest, the sources of large-scale pollution are not so much individual emitters as group of emission sources. Traffic volume, age of the road, prevailing wind etc. can affect roadside metal levels. Temperature is likely to influence the pattern of distribution of pollutants through its effects upon air movements [2].

Clergeau *et al*, 1998[3]; Blair, 1999[4]; Swvard *et al*, 2000[5]; Frabcl and Schnell, 2002[6] stated that birds are highly visible and sensitive to alteration in habitat structure and function; consequently they serve as excellent indicator of changes and stresses in urban forest ecosystem. The area of instance urbanization often results in communities dominated by a few species [4].

#### **OBSERVATION OF MALKHED FOREST PATCH - a preview:**

Study area of present work is in district Amravati. Amravati district is located in Maharashtra state of India between 20°32' and 21°04' north latitudes and 76°37' and 78°37' and 76°27' east longitudes. Sawanga-Vithoba lake also called as Malkhed Talav is located in Chandur Railway Tahsil of Amravati district. It is surrounded by hilly area and dry deciduous forest.

#### **Biodiversity of Flora in Malkhed Reserve Forest**

This forest is rich in plant species such as Teak (*Tectona grandis*), Khair (*Acacia catechu*), Palas (*Butia monosperma*), Salai, Neem (*Azadirachta indica*), Subabool (*Leucaena leucocephala*), *Calotropis procera*, *sps.*, *Ficus* *sps.* plants etc. The catchment area of lake is 90 Sq. km. Some prominent semi-evergreen species along with the deciduous member are also found. Malkhed talao and Lalkhed talao is located in study area as a large drinking water source for faunas. The 275 Plants species was identified. Out of which some species are given in **Table1**.

**Biodiversity of Birds in Malkhed Reserve Forest:** The 200 Birds species are identified in Malkhed region out of these some are migrant and some are residential species. Some species are listed in **Table2**.

**Biodiversity of Animals in Malkhed Reserve Forest:** In Malkhed Forest the number of Mammals species are identified out of which some are listed in **Table3**

**Biodiversity of Reptiles in Malkhed Reserve Forests:** The some species in Malkhed forest are listed in **Table 4**

**Table1: Biodiversity of Flora in Malkhed Reserve Forest**

Sr. No.	Vernacular Name	Botanical Name
1	Kambarmodi	<i>Tridax procumbens</i>
2	Kunjar	<i>Digera muricata</i>
3	Arjun	<i>Terminalia arjuna</i>
4	Gajargawat	<i>Parthenium hysterophorus</i>
5	Bel	<i>Aegel emarmelos</i>
6	Dudhi	<i>Euphorbia heyneana</i>
7	Chandrajyoti	<i>Jatropha eurca</i>
8	Neem	<i>Azadiracta indica</i>
9	Amratvel, Kumbhela	<i>Cayratia trifolia</i>
10	Aran, Jamrasi	<i>Cassine glauca</i>
11	Maharukh	<i>Ailanthus excels</i>
12	Paringa	<i>Grewia ulifolia</i>
13	Salai	<i>Boswellia arrata</i>
14	Anjan	<i>Hardwickia binnata</i>
15	Karanj	<i>Pongamia pinnata</i>
16	Gulvel	<i>Tinospora cordiforia</i>
17	Vasanwel	<i>Caeculus hirsums</i>
18	Sitaphal	<i>Annona squamosa</i>
19	Raimuni	<i>Lantana camara, Ver. Flava</i>
20	Palas	<i>Butea monosperma</i>
21	Sagwan, Sag	<i>Tectona grandis</i>
22	Bor	<i>Zizypus maritiana, Z. Jojoba</i>
23	Moha	<i>Madhuca indica</i>
24	Sona	<i>Bauhaunia sp.</i>
25	Behada	<i>Terminalia bellerica</i>
26	Babul	<i>Acacia nilolica, Acacia chundra</i>
27	Jambul	<i>Syzygium cumine</i>
28	Kalkuilee	<i>Mucuna pruiens, Mucuna monosperma</i>
29	Aawala	<i>Embllica officinals</i>
30	Pipal	<i>Ficus religiosa</i>
31	Umbar	<i>Ficus recemosa</i>
32	Lajalu	<i>Mimosa pudica</i>
33	Jangali bhendi	<i>Abelmoscus ficuineus</i>
34	Kali takal	<i>Cadba fruticosa</i>
35	Chikna	<i>Sida alba, Sidaglutinosa</i>
36	Phutani	<i>Polyala arvensis, P. elongates</i>
37	Shendari	<i>Hibicus hirtus, H. labatus, H. ovalifortus, Malachra capital</i>

**Table 2: Biodiversity of Birds in Malkhed Reserve Forest**

Sr. No.	Vernacular Name	English Name	Scientific Name
1	Maldhok	Buttonquail	<i>Turnix sp.</i>
2	Titwi	Red Wattled Lapwing	<i>Vanellus indicus</i>
3	Tutari	Wood sandpiper	<i>Tringa glareala</i>
4	Bhor	Dove Type	<i>Streptopelia sp.</i>
5	Chatak	Pied Crested Cuckoo	<i>Calamotor jacobinus</i>
6	Weda Raghu	Small Bee Eater	<i>Merosp sp.</i>
7	Nilkanth	Indian Roller	<i>Coracias benghalensis</i>
8	BrahmiMaina	Brahminy Starling	<i>Sturnus sp.</i>
9	Nilkanth	Blue Throat	<i>Luscinias vecica</i>
10	EuropeanSasana	Common Kestrel	<i>Falco tinnunculus</i>
11	Khandya	Small Blue Kingfisher	<i>Alcedo althis</i>
12	Khandya	White Breasted Kingfisher	<i>Halcyon Smryensis</i>
13	Sutar	Wood pecker	<i>Chrysocolaptes sps.</i>
14	Sayal	Porcupine	<i>Hystrix indica</i>
15	Kawla	Common Crow	<i>Carus sp.</i>
16	Ghubad	Barn Owl	<i>Tyto alba</i>
17	Hoopoe	Common Hoopoe	<i>Upupa epops</i>
18	Shikra	Goshawk	<i>Accipiter badius</i>
19	Gidhad	Indian Vulture	<i>Gyps indicus</i>
20	PandhriTitwi	Lapwing	<i>Vanellus spinosus</i>
21	PakhiBagala	Pond heron	<i>Ardea cinerea</i>
22	GaiBagla	(Paddy birds) Cattle Egret	<i>Bubulcus ibis</i>
23	Kapshi	Black Shouldered Kite	<i>Elanus caeruleus</i>
24	RanginTitar	Paired Francolin	<i>Francolinus pictus</i>
25	RakhiDurlaw	Common Quail	<i>Cournix Sp.</i>
26	ZudpiDurlaw	Gungle Bush Quail	<i>Perdicula asiatica</i>
27	KhadkiDurlaw	Rock Bush Quail	<i>Perdicula sp.</i>
28	Mor	Indian Pea fowl	<i>Pavo cristatus</i>
29	Ran Kahtik	Common Wood Strike	<i>Tephrodornis pondicerianus</i>

**Table 3: Biodiversity of Animals in Malkhed Reserve Forest**

Sr. No.	Vernacular/English Name	Scientific Name
1	Nilgai	<i>Hyaena hyaena</i>
2	Black Bug / Chinkara	<i>Antelope cervicapra</i>
3	Barking Deer or Khekar	<i>Muntiacus muntjak</i>
4	Leaf Monkey	<i>Caprolagus hispidis</i>
5	Indian Wolf	<i>Canis lupus</i>
6	Sambhar	<i>Baselaphus iragocanelus</i>
7	Leopard/ Panther	<i>Panthera pardus</i>
8	Wild Pig	<i>Cervus unicolor</i>
9	Hyena	<i>Axis axis</i>
10	Chitah	<i>Muntiacus muntsak</i>
11	Mouse hare	<i>Susscrofo</i>

**Table 4: Biodiversity of Reptiles in Malkhed Reserve Forests**

Sr. No.	Vernacular Name	Common Name	Scientific Name
1	Cobra	Spectacle Cobra	<i>Naja naja</i>
2	Manyar	Common Indian Krait	<i>Bungarus caeruleus</i>
3	Ghonas	Russell's Viper	<i>Daboia russelii</i>
4	Furse	Sow Scaled Viper	<i>Echis carinatus</i>
5	Naneti	Buff Striped Keelback	<i>Amphiesma stolata</i>
6	Kawadya	Common Wolf Snake	<i>Lycodn capucinus</i>
7	Pandiwali	Checkered Keelback	<i>Fowlea piscator</i>
8	Dhaman	Indian Rat Snake	<i>Ptyas mucosa</i>

## RESULTS AND CONCLUSION

Forest are the place for sustenance of human being. Biodiversity is a changing factor with the time period and modification in the environmental conditions. But due to human population and its impacts the normal process is faster and of extinction of species has increased. Although the forest under study is plain area, the biodiversity of species is enumerable and helpful for the nearby forest. The forest is blessed with 275 plant species, 72 animals and innumerable bioworld.

After the survey and observation of the Malkhed forest, it is observed that the species like *Parthenium sp.*, *Lantana camara*, *Ageratum sp.*, *Argemone mexicana*, *Alternanthera sp.*, *Balanites sp.* are spreading at faster rate causing delimiting the spread of parental species like *Dalbergia sissoo*, *Cassia tora* *Acacia sp.*, *Tectona grandis*, *Sesbania grandiflora* etc. and threatened them to extinction.

Pollution, human intrusion, grazing activity and increase in temperature are in some extent responsible for this alteration.

**Conflicts of interest:** The authors stated that no conflicts of interest.

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