



A BIODIVERSITY STUDY OF KORPANA FOREST PATCH, CHANDRAPUR, VIDARBHA REGION, INDIA

S. K. Gudadhe^{*1}, M. A. Niranjane² and S. P. Pandao³

¹Department of Environmental Science, Dr. Khatri Mahavidyalaya, Tukum, Chandrapur

^{2&3}Department of Botany, Dr. Khatri Mahavidyalaya, Tukum, Chandrapur

*Corresponding Author: swanil.k.gudadhe@gmail.com

Communicated : 27.01.2023

Revision : 02.03.2023 & 10.03.2023

Published : 30.05.2023

Accepted : 07.04.2023

ABSTRACT:

There are three major types of ecosystem, terrestrial, areal and aquatic, which again get divided into smaller sub ecosystems. These discrete patches of ecosystems are never acutely cut off from one another. There are always transition zone in between them. For example, aquatic ecosystems gradually merged into terrestrial and aerial ecosystems and vice-versa. For the formation of any strong and stable ecosystem there should exist a strong interlinkage of food chain i.e. food web. The more diversity, the more stronger food web and the stronger ecosystem. Food, shelter and safety are the three basic requirements essential to establish Strong ecosystem. One of the major types of Terrestrial ecosystem is the forest. the present study mainly aims at the investigation of macro organisms present in Korpana forest patch of Chandrapur district in Vidarbha region. This forest has abundance of tree species like *Azadiracta indica*, *Acacia*, *Bauhinia*, *Aegle*, *Zizipus*, *Pterocarpus*, *Terminalia*, etc. It is also rich with mammal species viz., *Boselathus*, *Muntiacus*, *Sus*, *Cervus*, *Panthera*, *Felis*, etc., Reptile species of *Cobra*, *Indian Krait*, *Vipers*, *Indian rat snakes* etc., species of Aves like *Peacock*, *Doves*, *Nilkanth*, *Hoopoo*, etc., As usual, besides natural calamities, human interference in forest is responsible for the decline of its beauty and biodiversity. Hence, it's an urgent need of time to conserve such a diverse and beautiful scenario of forest.

Keywords : *Biodiversity, Korpana Forest, Chandrapur, Vidarbha, India.*

INTRODUCTION :

Biodiversity denotes to the variety of flora, fauna and microbes in a specific area (Sarvad *et al* 2000). Although living world seems to be a single unit, but it is actually a result of various discrete ecosystems, which are directly and indirectly Binded to each other by the interdependency of tropic web and cycling of inanimate material among these ecosystems (Champion and Seth, 1964). Rich biodiversity play important role in stabilizing ecosystem for long period until and unless nature will interfere therein. Rich biodiversity provides more Intendency which ultimately results into a strong and stable ecosystem. Any ecosystem mainly based on floral component (Gentry, 1988). Geography and climate of India made it one of the richest biodiverse and hotspot region in the world. (Goldsmith, *et al* 1992). Documentation of biodiversity is a matter of importance in all aspects viz., cultural heritage, historical, sustainability etc. This has become more inevitable due to changing life style of man.

Maharashtra is richest state having large floral and faunal biodiversity. Total six tiger reserve and nine wildlife sanctuaries in state explain itself how major biodiversity's are found in this state. Vidarbha region is placed to the Northern East part of Maharashtra. The studies are located in between 19°44'16.02"N, 78°57'03.70"E; 19°43'56.84"N, 78°51'15.80"E; 19°39'44.09"N, 78°51'16.40"E and 19°40'37.70"N, 78°57'33.58"E by Latitude. Vidarbha's forest is a tropical dry deciduous forest belonging to the Satpuda ranges. The temperature goes above 48°C in some cities like Chandrapur, Nagpur, Ghugus, etc. during hot summer season. Temperature is likely to influence the pattern of distribution of pollutants through its effects upon air movements (Gudadhe *et al* 2012).

In Vidarbha, protected forests, grassland pockets, number of water bodies and agriculture crop patterns has maintained the great diversity of flora and fauna. Forests in Vidarbha occupy about 31.60% of the total area of Maharashtra state forest (Gudadhe and Niranjane, 2020).

The name of Korpana forest was introduced due to Korpana city. It is situated in South-West side of Chandrapur district and near to Telangana state border. The distance of study area is near about 69 km from Chandrapur city. Some part of this area is thickly covered with *Tectona grandis* species; therefore, this is dominating species of this forest.

Method of Study of Biodiversity: The main purpose of the study is to explore the biological data so that it can be used in various Government and undertaking projects. the present biodiversity study is being carried out by field survey of the area. We use our subject knowledge, verified it by reference books ,Flora ,etc. Furthermore, the secondary data we used from various Government and non-governmental sources. We have taken help from various e-resources as well.

Survey methodology :

Flora: The reason behind our selection of this season is that the forests of Vidarbha region fall into Tropical Moist Deciduous Forest category. During which the vegetation is at its most visible and in the identify stage. like sufficient height, reproductive stages, etc. The plant species where identified with the help of secondary sources like reference books, Subject Knowledge, Floras, and from Forest Department. Many times, the floral information was collected with Vernacular names of species made by local inhabitants. Later on the spaceman or photo is verified with authentic sources and then their botanical name is assigned (Harney, 2015).

Fauna: Collecting the faunal information of the forest took comparatively more time .The fauna assessment has been done by extensive field survey. For assessment of mammal we use Line transect method and for amphibian we use transect and patch sampling method. Additionally, we use following sources to get information of Fauna in the forest. Actual sighting animal call foot marks and excreta animal remains etc. We also gather information about wildlife from local inhabitants. We compare the collected information of fauna, in relation with the frequency of animal sighting and their visits in forest area. This notation was

later on confirm from different Agencies like Forest Department, wildlife department, etc.

Avifauna: Reach avifauna of any ecosystem indicate its stability and durability. (Clergeu *et al* 1998). Avifauna play a crucial role in maintenance of traffic web of any ecosystem (Blair, 1999). In any ecological survey, assessment of avifauna is complicated but important. we noted and identified the birds with the help of 8x40 'Optima Zenith ' Binocular and standard field identification guides. We collected information of birds living in Korpana Forest by ourselves, from bird friends, local inhabitants, bird book, etc. We authenticate this information by applying all the available ways. We finalised the list after discussing with many of our bird friends we also collected information about those Birds which arrive and occur during particular season of The Year.

RESULT AND DISCUSSION :

RESULTS:

Diversity of flora in Korpana Forest: Diversity of flora in Korpana forest: this forest is rich with all those plant species which are abundantly present in Vidarbha region. The observed plant in forest are listed below in table 1.

Diversity of Birds in Korpana Forest: The types of different Birds occur in particular region are depending upon different things, such as. varied season, type of forest, major climate prevailing in that forest, etc. We surveyed the area by keeping in mind all these variables. The birds which we found in the forest are listed in table 2

Diversity of Animals in Korpana Forest: Most of the usual and unusual mammal which live in this forest are listed below in table 3

Diversity of Reptiles in Korpana Forests: The following reptiles are regular inhabitant of this forest. their list is given below in table 4

DISCUSSION:

Most of the people living near the forest depend on the forest for their daily needs. Forest is a resource for their livelihood But due to lack of adequate scientific knowledge, humans cannot maintain the sustainability of forest. As a result, their future generations cannot get the things they need for their daily life from that forest. Forest Departments focus only on saving and growing forests. Therefore, there are always disputes between the forest account and the

people around it Resulting in illegal logging and poaching of wild animals etc. So the situation on both sides gets worse. This affects the food chain of that forest. Any single system such as a forest is dependent on its food chain and the resulting loss of forest sap leads to climate, biodiversity pollution and other life-threatening conditions.

This forest is play approximately base blessed with over 200 plant spaces large number of animal's micro flora and micro fauna after the survey and observation of Korpana for rest it is observed that the species like parthenium as you right I'm on alternate area etc. are spreading at faster rate causing the decline of decline and spread of many local origin endemic herbaceous spaces like these are about to threatened condition (Cam *et al* 2000). Human interference like pollution human intrusion grazing activity industrialization transportation exploitation cause the cause in the decrease of forest wealth and increase in temperature which again responsible to the loss of forest wealth this will cause of conversation conversion of forest into a barren land

CONCLUSION:

This forest is account for approximately more than over 200 plant spaces. Large number of animals, micro flora and micro fauna. After the survey and observation of Korpana forest, it is observed that the species like *parthenium sp.*, *Ageratum sp.*, *Artemon Mexicana*, *Alternanthera sp.*, etc. Are spreading at faster rate causing the decline and spread of many local original and endemic herbaceous spaces like *Cassia tora*, *Sesbania sp.* are about to go in threatened condition.

Human interference such as pollution, human intrusion, grazing activity, industrialization, transportation, exploitation, etc. cause in the decrease of forest wealth and area and increase in temperature which again responsible to the loss of forest wealth. This will cause of conversion of forest into a barren land. Animals are more sensitive about their habitats. Any encroachment in their habitats create crisis in between Animals and human.

REFERENCES :

Blair. R.B.: Birds and butterflies along an urban gradient: surrogate taxa for assessing biodiversity? *Ecological Applications*, (1999); 9: 164-170.

Cam. E.: J. Nichols: J.R.Sauer: J.E. Hines and C.H. Flather: Relative species richness and community completeness: birds and urbanization in the Mid-Atlantic States. *Ecological Applications*, (2000); 10: 1196-1210.

Champion HG, Seth SK.: A revised survey of the forest Types of India. Govt. of India Press New Delhi, (1964); 404.

Clergeu. P; J.L. Savard and G. Faladreu: Bird Abundance and diversity along an urban-rural gradient: a comparative study between two cities on different continents. *Condor*, (1998); 100: 413-425.

Environmental Monitoring and Assessment 73: 67-93.

Gaston. K.J.; T.M. Blackburn and K.K. Goldewijk: Habitat conversion and global avian biodiversity loss. *P. Roy. Soc. Lond. B. Bio.*, (2003); 270: 1293-1300.

Gentry, A. H.: Changes in plant community diversity and floristic composition on environmental and geographical gradients. *Annals Missouri Bot. Gard.* (1988), 75 : 1-34.

Goldsmith, F. B., Harrison, C. M. and Morton, A. J.: Description and analysis of vegetation in forest resources, crisis and management, Edt. Vandana Shiva, V. M. Mejer-Homji and N.D. Jayal. Natraj Publication. Dehra Dun. (1992).

Gudadhe, S. K. and Niranjane, M. A.: Biodiversity of Malkhed Reserve Forest, Amravati, Central India, *Int. Res. J. of Science & Engineering*, (2020); Special Issue A7: 602-606

Gudadhe, S. K.; V. S. Manik; P.B. Deshbhratar and D. S. Ramteke: Study of Levels of Heavy Metal in Soil under Amravati Municipal Jurisdiction, Maharashtra (India): *Asian Journal of Experimental Science*, (2012); Vol. 26 (2): 11-18.

Harney, N.V.: Avifaunal Diversity of Junona Lake near Chandrapur (MS), India, *Asian Journal of Multidisciplinary Studies*, (2015); 3 (1): 45-51

Savard. J. L., P. Clergeu and G. Mennechez: *Biodiversity Concepts and urban*

ecosystems. Landscape and Urban

Planning, (2000); 48: 131-142.

Table 1. Diversity of flora in Korpana Forest

Sr. No.	Vernacular Name	Botanical Name
1	Aawala	<i>Embllica officinals</i>
2	Aghada	<i>Achyranthes aspera</i>
3	Ain	<i>Terminalia tomentosa, T. elliptica.</i>
4	Amarvel	<i>Cuscuta sp.</i>
5	Amratvel, Kumbhela	<i>Cayratiatri folia</i>
6	Arjun	<i>Terminalia arjuna</i>
7	Babul	<i>Acacia nilolice, Acacia chundra</i>
8	Baiwa	<i>Cassia fistula</i>
9	Bakul	<i>Mimuseps elengi</i>
10	Bambu	<i>Dendrocalamus strictus & bambosa sp.</i>
11	Behada	<i>Terminalia bellerica</i>
12	Bel	<i>Aegelemarmelos</i>
13	Bija	<i>Pterocarpus marsupian</i>
14	Bor	<i>Zizypusmaritiana, Z. Jojooba</i>
15	Chandrajyoti	<i>Jatropha gossypifolia</i>
16	Chichbalai	<i>Pithecellobium dulce</i>
17	Chikna	<i>Sida alba, Sidaglutinosa</i>
18	Dudhika	<i>Euphorbia heyneana</i>
19	Durva	<i>Cynodon Dactylon</i>
20	Gajargawat	<i>Parthenium hysterophorus</i>
21	Gulmohar	<i>Delenixregia / Caesalpinia pulcherrima</i>
22	Hadu	<i>Haldina cordifolia</i>
23	Heti/ Hadga	<i>Sesbania grandiflora</i>
24	Hirda	<i>Terminalia chebula</i>
25	Hiwar	<i>Vachellialeu cophloea</i>
26	Jambul	<i>Syzygium cumine</i>
27	Jangalibhendi	<i>Abelmoscus ficuineus</i>
28	Jungle neem	<i>Melaiaza dirakhta</i>
29	Junglibhendi	<i>Abelmoscus ficulneus</i>
30	Kadamb	<i>Niolamarckia cadamba</i>
31	Kalkuilee / Khajkuri	<i>Mucunaprurita, Mucunamono sperma</i>
32	Kambarmodi	<i>Tridax procumbens</i>
33	Katbor	<i>Ziziphu snummlaria</i>
34	Katesawar	<i>Bombax ceiba</i>
35	Khirni	<i>Manilkar ahexanadra</i>
36	Kombda	<i>Celosia argenteani</i>
37	Maharukh	<i>Ailanthus excels</i>
38	Moha	<i>Madhucaindica, M. longifolia</i>
39	Neem	<i>Azadirachcta indica</i>
40	Palas	<i>Butea monosperma</i>
41	Phutani	<i>Polgyalaarvensis, P. elongates</i>
42	Pipal	<i>Ficus religiosa</i>
43	Raimunni	<i>Lantana camera</i>
44	Rui	<i>Calotropis gigantica, C. procera</i>
45	Sagwan / Sag	<i>Tectona grandis</i>
46	Sona / Aapta	<i>Bauhaunia sp.</i>
47	Tarota	<i>Cassia tora</i>
48	Tembhurni	<i>Diospyros melanoxylon</i>
49	Umbar	<i>Ficus recemosa</i>
50	Vanda	<i>Vanda sp.</i>
51	Vasanwel	<i>Cocculus hirsutus</i>

Table 2. Diversity of birds in Korpana Forest:

Sr. No.	English / Vernacular Name	Scientific Name
1	Asian Bill Stork	<i>Anastomus osciatus</i>
2	Asian Koil	<i>Eudynamis scolopacea</i>
3	Bhor	<i>Streptopelia sp.</i>
4	BrahmiMaina	<i>Sturnus sp.</i>
5	Chatak	<i>Calamotor jacobinus</i>
6	EuropeanSasana	<i>Falco tinmnculus</i>
7	GaiBagla	<i>Bubulcus ibis</i>
8	Ghubad	<i>Tyto alba</i>
9	Gidhad	<i>Gyps indicus</i>
10	Grey Heron	<i>Ardeacinerea</i>
11	Hoopoe	<i>Upupaepops</i>
12	Indian Pond Heron	<i>Aredeolagrayii</i>
13	Kapshi	<i>Elanus caeruleus</i>
14	Kawla	<i>Carvus sp.</i>
15	Khadki Durlaw	<i>Perdicula sp.</i>
16	Khandya	<i>Alcedoalthis</i>
17	Khandya	<i>Halcyon Smryensis</i>
18	Large Egret	<i>Casmerodius albus</i>
19	Mor	<i>Pavo cristatus</i>
20	Nilkanth	<i>Coracias benghalensis</i>
21	Pakhi Bagala	<i>Ardea cinerea</i>
22	Pandhri Titwi	<i>Vanellus spinosus</i>
23	Ran Kahtik	<i>Tephrodornis pondicerianus</i>
24	RanginTitar	<i>Francolinus pictus</i>
25	Sayal	<i>Hystrixindica</i>
26	Shikra	<i>Accipiter badius</i>
27	Sutar	<i>Chrysocolaptes sps.</i>
28	Titwi	<i>Vanellus indicus</i>
29	Tutari	<i>Tringa glareala</i>
30	Weda Raghu	<i>Merosp sp.</i>

Table 3: Diversity of Animals in Korpana Forest:

Sr. No.	Vernacular/English Name	Scientific Name
1	Aswal / Wild bear	<i>Melursus ursinus</i>
2	Barking Deer or Khekar	<i>Muntiacus muntjak</i>
3	Chital	<i>Axis axis</i>
4	Hiran	<i>Gazelle bennettii</i>
5	Kolha	<i>Canis aureus indicus</i>
6	Leopard/Bipta	<i>Panthera pardus</i>
7	Monkey	<i>Rhesus macaque</i>
8	Nilgai	<i>Boselaphus trango camelus</i>
9	Sambhar	<i>Rusa unicolor</i>
10	Wild Bore	<i>Sus scrofa cristatus</i>
11	Wild Cat	<i>Felis lybica ornata</i>
12	Wild Hare	<i>Leps nigricollis</i>

Table 4. Diversity of Reptiles in Korpana Forest

Sr. No.	Vernacular Name	Scientific Name
1	Cobra	<i>Naja naja</i>
2	Manyar	<i>Bungarus caeruleus</i>
3	Ghonas	<i>Daboia russelii</i>
4	Furse	<i>Echis carinatus</i>
5	Pandiwali	<i>Fowleapiscator</i>
6	Dhaman	<i>Ptyas mucosa</i>
7	Naneti	<i>Amphiesma stolata</i>
8	Kawadya	<i>Lycodn capucinus</i>