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Plant diversity of Kothari-Gondpipari-Pombhurna forest range, Chandrapur, central India

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Abstract
The diverse types of ecosystems interact amongst each other, thus holding the diver's life on earth. One such major terrestrial ecosystem is the forest. Human being and forest are interdependent for survive. Misuse of forest reduces the ethics and morals of being a human. The Kothari-Gondpipari-Pombhurna Forest Range/patch is situated in South South East side of Tadoba National Forest in Chandrapur district. According to the plant biodiversity study of Kothari-Pombhurna Forest Range, it has been observed that there are more than 20 herbs species, more than 25 shrubs species and more than 70 tress species. *Dendrocalamus strictus Argemone mexicana, Tridax procumbens, Tectona grandis, Acacia nilotica and Boswellia arrata* are the common plants in the forest. It has been seen during the survey that *Tectona grandis, Lantana camara, Acacia sp.*, etc are the dominating plants of Kothari-Gondpipari-Pombhurna Forest Range. They can restrict or dominate to other species growth. The soaring human and cattle population have burdened extreme pressure on ecosystem. It decreases the flora of forest. The hoteling, highway, transportation and tourism within the forest have degrading the forest ecosystem. Now there is the need to improve and increase of forest cover.

Keywords: plants, diversity, Kothari-Pombhurna forest, Chandrapur, central India

Introduction

Diversity of Plant stated that the presence of extensive variation of plant species in their natural surroundings. Our country has rich with plant diversity around the world. Forests are the complex ecosystems and it takes the place of heart in the beauty of biodiversity. The idea of biodiversity can simply apply to the urban ecosystem as there is rise in extra and additional people living in cities, the repair, conservation and improvement of biodiversity become imperative [1]. Knowledge of forest structure and its function are necessary for the study of forest dynamics, plant animal interactions and nutrient cycling [2].

An aspect that has produced significant consideration for many years among ecologists as well as evolutionary and preservation ecologists has been the analysis of the patterns, causes and preservation of biological diversity in the tropics [3]. Vegetation is an important component of an ecosystem, which displays the effect of various environmental conditions [4]. Documentation of any area with a remarkable diversity and its cultural heritage is a matter of importance for the well-being of rapidly changing Indian society. Central India having huge floral and faunal diversity region. Total six tiger reserve and nine wildlife sanctuaries in state explain itself how major biodiversity's are found in this state. The Chandrapur district is situated in the eastern of Maharashtra state. The Chandrapur district is positioned in between 19.30' N and 20.45' N latitude and at 78.46' E longitude. The study area are located in 19°52'01.04"N, 79°32'01.75"E Northern latitude; 19°33'12.60"N, 79°32'50.33" E by southern latitude; 19°42'15.63"N, 79°29'54.15"E by Western longitude and 19°42'23.86"N, 79°40'24.53"E by Eastern Latitude. Vidarbha's forest is a tropical dry deciduous forest belonging to the Satpuda ranges. The temperature goes above 49°C in Chandrapur tehsil during hot summer season. Temperature is likely to impact the pattern of spreading of pollutants through its effects upon air activities [5].

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 [6]. There is an urgent need of biodiversity conservation of the degrading area. The rapid growing of the weed grasses interfering the development of the native species [7].

The name of Kothari-Gondpipari-Pombhurna forest was introduced due to Kothari, Gondpipari and Pombhurna Cities and this forest is located in South-East side in Chandrapur district. The distance of study area is near about 40 km from Chandrapur tehsil. This area is compactly sheltered with *Tectona grandis species*; therefore, this is dominating species of this forest range.

Methodology and Experimental Techniques

The basic purpose is to discovering the biotic environment to contribution in the decision-making process and to ensure that the decisions under contemplation are eco-friendly. This study is based on the floral assessment of the study area is based on field critical investigation, supported by secondary data from various governmental and non-governmental sources.

Survey Methodology

Flora: The present investigation on the floral assessment is based on extensive field critical investigation of the area. The investigation has been conducted in pri and post winter season in between the month of November-2020 to April-2021. The

anonymous plant species were acknowledged with the help of secondary sources like degree colleges and forest department. Also, the collection of plant species, data was also composed with vernacular names of plant species made by local inhabitants. The other relevant data on plant diversity, economically important plant species and medicinal plant, rare and endangered species in the study area have been collected during site visit and from different secondary sources [8].

The Observations of Kothari-Gondpipari-Pombhurna Forest Range

The present investigation was done in Chandrapur district. Chandrapur district is located in Maharashtra state of India. The Kothari-Gondpipari-Pombhurna cities is surrounded by large trees and dry deciduous forest types. This area is rich with wild variety of medicinal herbs, shrubs and trees and diversity in faunas.

Observations and Results

Plant Diversity of Kothari-Gondpipari-Pombhurna Forest Range: This forest is rich in flora species in **herbs** like Bamboo (*Dendrocalamus strictus*), Tarota (*Cassia tora*), Tikhadi (*Cymbopogon martini*) in Table 1, Shrubs like Banrahar (*Flemingia Semialata*), Ghaneri (*Lantana camera*), Dudhi (*Wrightia tinctoria*), Nirgudi (*Vitex negundo*), Zingrool (*Grewia orbiculata*) in Table 2. and in Trees like Sagwan (*Tectona grandis*), Palas (*Butia monosperma),* Khair (*Acacia catechu*), Neem (*Azadirachta indica*), *Calotropis procera, sps.*, *Ficussps*. in Table 3 respectively.

Discussion

Forest is the place for nourishment of human being. Diversity is a shifting factor with the time period and amendment in the environmental conditions. But due to apparatus and new techniques of human activities and its effect causes the normal methods of destruction of species into an exponential way. In the heart of Kothari-Gondpipari-Pombhurna forest range is blessed with more than 20 herbs species, more than 25 shrubs species and more than 70 tress species. After the survey and observation of Kothari-Gondpipari-Pombhurna forest range, it is observed that the species like *Parthenium sp., Cassia sp., Dendrocalamus sp., Vitex sp., Ageratum sp., Argemone mexicana, Alternanthera sp*. are spreading at faster rate causing delimiting the spread of many herbaceous species like *Cassia tora*, Sesbania sp. are threaten them to extinction. Pollution, human disturbance, cropping activity, industrial development, transportation, manipulation in using forest wealth and upsurge in temperature are also playing important role up to large level accountable for the health and variation of forest. The greatness of the effect of human activities on global diversity has been recognized at several structural levels. However, although there have been many studies of the impact of local-scale vagaries in land use (e.g. logging) on the richness of groups of plants [9]. It has been recommended that the effect of development (urbanization) on the forest wealth be contingent on the comparative status of amendment of original habitats and the increase in new habitats created by urban development [10].

Conclusion

It is concluded that the due to speedy progress and expansion in the urbanization, industrial development and in many developing sectors, the threat to the local plant diversity is upsurges in the alarming rate. There is an crucial requirement of plant diversity protection of the humiliating area. With respect to Kothari-Gondpipari-Pombhurna forest range, this forest consists of the more than 20 herbs species, more than 25 shrubs species and more than 70 tress species. The fast growing of the weed grasses intrusive the expansion of the inherent species.

Table 1: Diversity of Plants w.r.t. Herbs

Sr. No.	Local Name	Scientific Name	Sr. No.	Local Name	Scientific Name
1	Bamboo	*Dendrocalamus strictus*	13	Kunda	*Ischoemum pilosum*
2	Bhurbhusi	*Eragrostis tenella*	14	Kusal	*Heteropogon contortus*
3	Divali	*Tephrosia hamiltonii*	15	Mushan	*Iseilema laxum*
4	Dongri gavat	*Chrysopogon montana*	16	Paonia	*Sehima sulcatum*
5	Duswa	*Cynodon dactylon*	17	Pivili tilwan	*Cleome viscosa*
6	Gajargawat	*Parthenium hysterophorus*	18	Pivla Dhotra	*Argemone mexicana*
7	Gokru	*Tribulus terrestris*	19	Bantulsi	*Hyptis suaveolens*
8	Marwel	*Andropogon annulatus*	20	Rantur	*Atylosia scarabaeoides*
9	Hamata	*Stylosanthes hamata*	21	Scabra	*Stylosanthes scabra*
10	Kans	*Saccharum spontaneum*	22	Sheda	*Sehima nervosum*
11	Khas	*Vetiveria zizanioides*	23	Tarota	*Cassia tora*
12	Kodmor	*Apluda varia*	24	Tikhadi	*Cymbopogon martini*

Table 2: Diversity of Plants w.r.t. Shrubs

Sr. No.	Local Name	Scientific Name	Sr. No.	Local Name	Scientific Name
1	Banrahar	*Flemingia Semialata*	14	Kari	*Carrissa spinarium*
2	Bharati	*Gymnosporia spinosa*	15	Korat	*Barleria prionitis*
3	Chipti	*Desmodium pulchellum*	16	Kuda	*Holarrihena antidysenterica*
4	Chillari	*Mimosa rubicaulis*	17	Muradsheng	*Helicteres isora*
5	Chillati	*Caesalpinia sepiaria*	18	Nirmali	*Strychnos potatorum*
6	Dudhi	*Wrightia tinctoria*	19	Neel	*Indigofera cassioides*
7	Dhavati	*Woodfordia floribunda*	20	Nirgudi	*Vitex negundo*
8	Dikamali	*Gardenia resinifera*	21	Parijatak	*Muctanihes arbitristis*
9	Ghaneri	*Lantana camera*	22	Phetra-safed	*Gardenia latifolia*
10	Kudursi	*Bridelia hamiltoniana*	23	Phetra-kala	*Tamilnadia uliginosa*
11	Kudmudi	*Gardenia gummifera*	24	Tarwar	*Cassia auriculata*

12	Kharoti	*Grewia Hirsuta*	25	Waghoti	*Capparis horrida*
13	Kharata	*Dodonaea viscosa*	26	Zingrool	*Grewia orbiculata*

Table 3: Diversity of Plants w.r.t. Trees

Sr. No.	Local Name	Scientific Name	Sr. No.	Local Name	Scientific Name
1	Char	*Buchanania lanzan*	37	Kala siras	*Albizia lebbek*
2	Ain	*Terminalia alata*	38	Karai	*Millusa velutina*
3	Bartondi	*Morinda tinctoria*	39	Karanj	*Pongamia pinnata*
4	Amaltas	*Casssia fistula*	40	Karu	*Cassia siamea*
5	Amta	*Bauhinia malabarica*	41	Khair	*Acacia catechu*
6	Akashneem	*Millingtonia hortensis*	42	Kusum	*Scheleichera oleosa*
7	Aam	*Mangifera indica*	43	Kawat	*Limonia acidissima*
8	Apta	*Bauhinia racemosa*	44	Kulu	*Sterculia urens*
9	Aonla	*Emblica officinalis*	45	Khirni	*Manilkara haxandra*
10	Arjuna	*Terminalia arjuna*	46	Kumbhi	*Careya arborea*
11	Asah	*Lagrstroemia parviflora*	47	Kusug	*Schleichera oleosa*
12	Babul	*Acacia Nilotica*	48	Lendia	*Lagerstroemia parviflora*
13	Bakain	*Melia azadirach*	49	Lokhandi	*Ixora arborea*
14	Beheda	*Terminalia bellerica*	50	Medsing	*Dolichandrone falcata*
15	Bel	*Aegle marmelos*	51	Moha	*Madhuca longifolia*
16	Bhirra	*Chloroxylon swietenia*	52	Maharukh	*Ailanthus excelsa*
17	Biba	*Semecarpus anacardium*	53	Mokha	*Schrebera swietenoides*
18	Bija	*Pterocarpus marsupium*	54	Moyen	*Lannea coromandelica*
19	Bistendu	*Diospyros montana*	55	Neem	*Azadirachta indica*
20	Bor	*Zizyphus mauritiana*	56	Parad	*Stereospemum Squaveolens*
21	Chandan	*Santalum album*	57	Paradi	*Stereospemum chelenoides*
22	Chichwa	*Albizzia odoratissima*	58	Pipal	*Ficus religiosa*
23	Chinch	*Tamarindus indica*	59	Papada	*Garenia latifolia*
24	Dahibaras	*Cordia macleodii*	60	Rohan	*Soymida febrifuga*
25	Dhaman	*Grewia tilifolia*	61	Sagwan	*Tectona grandis*
26	Dhawada	*Anogeissus latifolia*	62	Saja/Ain	*Terminalia alata*
27	Dhoban	*Dalbergia paniculata*	63	Salai	*Boswellia serrata*
28	Ghoti	*Zizyphus glaberrima*	64	Semal	*Bombax ceiba*
29	Garari	*Cleistanthus collinus*	65	Shiwan	*Gmelina arborea*
30	Gongal	*Cochlospermum religiosum*	66	Sirus	*Albizzia lebbek & Albizzia procera*
31	Haldu	*Adina cordifolia*	67	Sissoo	*Dalbergia sissoo*
32	Hiwar	*Acacia leucophloea*	68	Sitaphal	*Annona squamosa*
33	Hirda	*Terminalia chebula*	69	Surya	*Xylia xylocarpa*
34	Jambhul	*Syzigium cumunii*	70	Tendu	*Diospyros melanoxylon*
35	Kalam	*Mitragyna parviflora*	71	Tiwas	*Ougenia oojeinensis*
36	Kakai	*Flacourtia indica*	72	Umber	*Ficus racemosa*

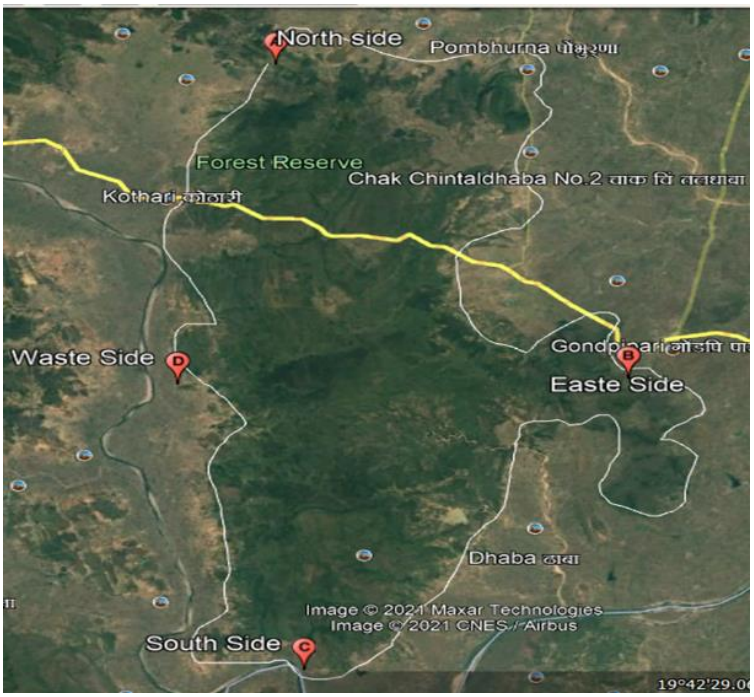

Fig 1

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