RESEARCH ARTICLE

PHYTOSOCIOLOGICAL STUDIES ON BIODIVERSITY OF BONAIGARH FOREST DIVISION, SUNDERGARH DISTRICT, ODISHA

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Abstract: The present study deals with the phytosociological study on flora and fauna diversity of Bonaigarh forest division, Sundergarh district, Odisha, India during 2014-2015. A total of 323 species were recorded which represented by 133 families and 270 genera. Out of 323 species, 120 trees (42 family and 99 genera), 61 shrubs and herbs (32 family and 51 genera), 19 climbers (13 family and 17 genera), 25 grasses (18 genera and poaceae family), 35 mammals (18 family and 30 genera), 13 reptiles (7 family and 12 genera) and 50 birds (20 family and 43 genera).

Keywords: Phytosociological, diversity, Bonaigarh Forest Division, Sundergarh district, Odisha, flora and fauna

INTRODUCTION

Large scale of deforestation, human settlements, agricultural expansion, and other infrastructure related to development over the last century led to a rapid decline of tropical forests throughout the world, which in turn affected the biodiversity, climate change, ecological services, soil fauna, soil productivity and the livelihoods of forest dwelling as well as rural people (Kumar, 2016). Apart from, with increase in human activity in and around forest ecosystems, phytosociological analysis of natural vegetation is recognized as an efficient and appropriate method to select out useful plant species from natural communities. Phytosociology used in many different research fields in nature conservation to describe the habitat and give the reader an idea of the species composition and vegetation structure but also on detailed structural attributes of the vegetation (Palomino and Alvarez, 2009). Biodiversity has become the issue of global attention because of growing awareness of its important on the one hand as ecosystem energy because it allows building complex tropical networks and it functions as insurance for ecosystem stability and resilience (Gaston and Spicer 2004) and other hand its rapid depletion worldwide (Shrestha, 1999; Singh, 2002).

Bonaigarh (N $21^0$35’26’’ to $22^0$04’38’’ and E $84^0$29’34’’ to $85^0$22’38’’) is the south-eastern part of Sundergarh district of Odisha (Fig. 1). While it is flanked by the panposh subdivision of Sundergarh in the north and Singhbhum district of Jharkhand in the north-east, it is bounded on the south and west by the Sambalpur district, on the east and south- east by the Keonjhar and Anugul district of Odisha respectively. This divison is mainly surrounded by Brahmani river on which the agricultural works depend. The tribals like the paudi bhuyans, the kol, the kharia, the kisan, the munda, and the gond. Therefore, the study presented here was undertaken to determine the biodiversity of flora and fauna of Bonaigarh forest ranger that will be helpful to best management, sustainable utility and conservation techniques.

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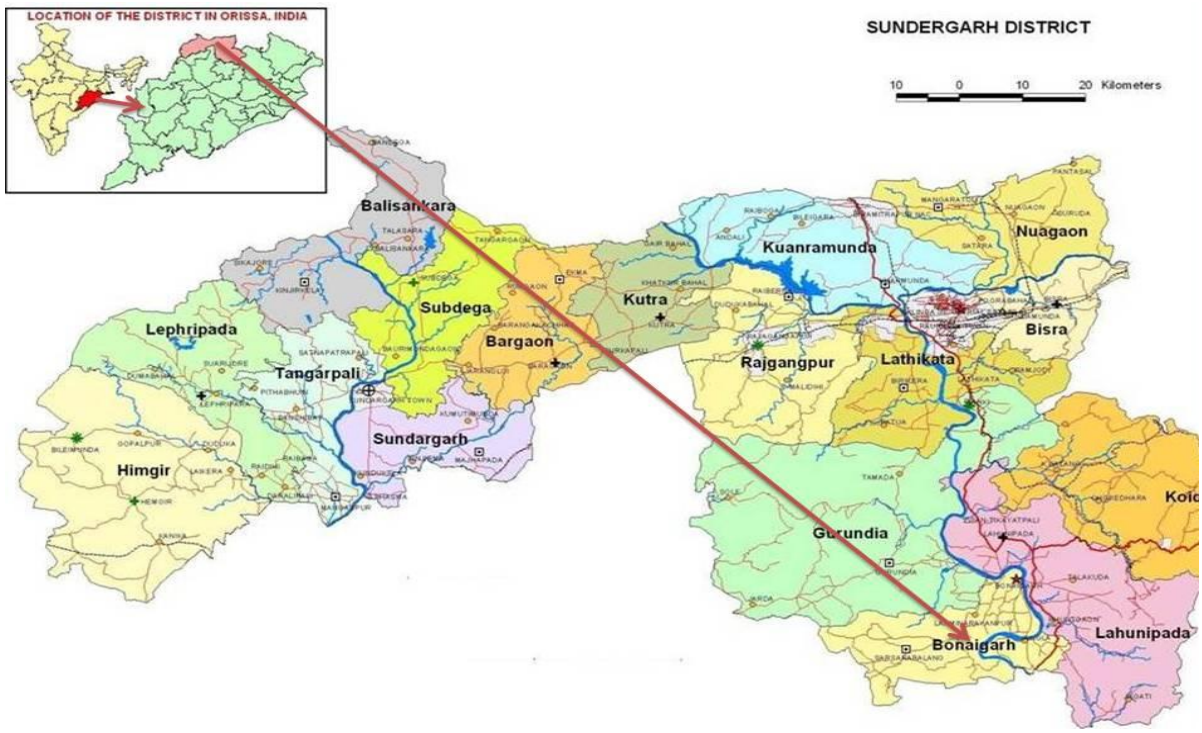

Fig. 1. Geographic map of the study area and arrow indicate the place of the research area

MATERIAL AND METHOD

The investigation was based on the six month survey worked under the BSc course (Forestry) in experience programme in 2014-15. The study area is very rich biodiversity in flora and fauna and also having ecological significance. We were laid randomized 100 plots; each plot represents as quadrates of 20 x 20 m and identified the all the tree species (≥30 cm GBH) found within the quadrate. We were also laid out the each quadrate in 5 x5 m. To collect information on ground layer and other herbaceous species, quadrates of 2 x 2 m size were laid out within the tree quadrates of all corners and one in centre (Fig. 2). All the plant species which were found inside and outside as well of the sample plots were identified and documented using 'botanically identified by Revision of the flora of Bombay Presidency (Blatter and McCann, 1926-1935); Flora of Gujarat state (Shah, 1978); Floristic, phytosociology and ethnobotanical study of Umarpada forest in South Gujarat (Vashi, 1985) and Flora of Gujarat (Shah *et al*., 1981).

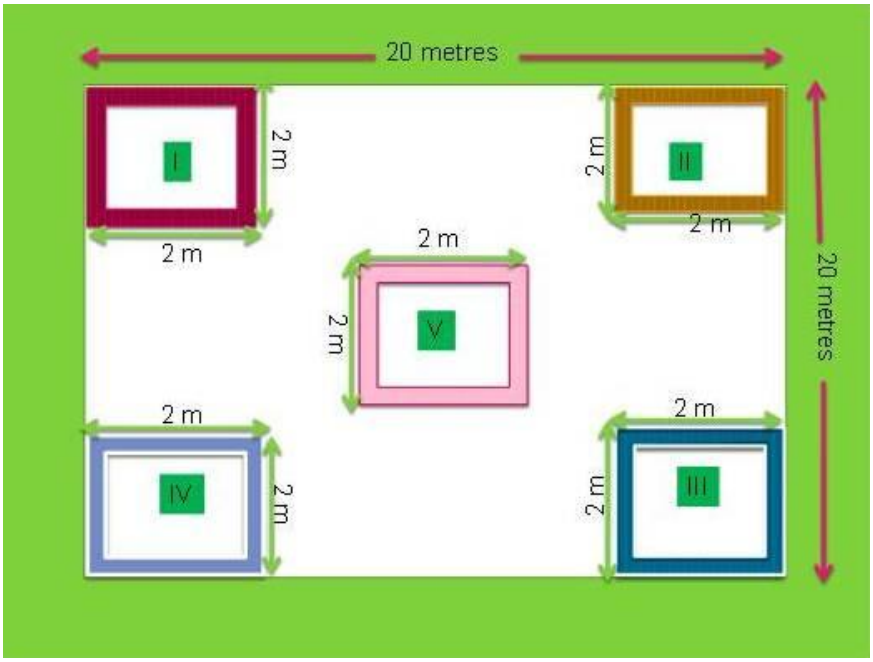

Fig. 2. Assessment of herbaceous species of tree species in Quadrate Plot

RESULT AND DISCUSSION

Plants are one of the very essential components on this earth and are very crucial as they form the main life supporting system for many living things including human race. Species composition and community structure are determined and regulated by a mosaic of environmental and anthropogenic factor (Dolezol and Srutek, 2002). Anthropogenic interventions like lumbering (Kikim and Yaadava, 2001), overgrazing (Ahmed et al., 2006), Low fertility (Dasti and Malik, 2000) and forest encroachments are among the major regulatory factors controlling species distribution (Muller and Ellenberg, 1974). The results may be influenced due to sampling methodology, geographical location, edaphic and climatic condition of the study area when compared with other tropical forests. The composition, total of 323 species were recorded which were represented by 133 families and 270 genera. (Appendix I to VII). In tree species *Shorea robusta* in association with *Terminalia tomentosa, Schleichera oleosa, Mitragyna parvifolia, Diospyros melanoxylon, Buchanania lanzan, Madhuca indica* and miscellaneous species. In herb, *Cassia tora* was the dominant species and followed by *Sida cordifolia* and *Ipomea reptans.*

Taxonomically, woody vegetation of Bonaigarh Forest Division, Sundergarh district, Odisha, Caesalpiniaceae and Fabaceae was most diverse family with maximum (9) number of species followed by Mimosaceae (8), Rubiaceae (7), Anacardiaceae, Euphorbiaceae and Moraceae (6), Myrtaceae and Combreataceae (5), Meliaceae, Rutaceae, Sterculiaceae and Verbenaceae (4) (Fig. 3). But on the herb vegetation, maximum species was recorded in Euphorbiaceae (5), Rubiaceae and Verbenaceae (4), Apocynaceae, Lamiaceae, Oleaceae, Solanaceae and Zingiberaceae (3) (4) while for climbers, Fabaceae (3), Dioscoreaceae, Liliaceae, Mimosaceae and Rhamnaceae (2) (Fig. 5).

Taxonomically, fauna diversity of Bonaigarh Forest Division, Sundergarh district, Odisha, Canidae and Felidae most diverse family with maximum (4) number of species followed by Cervidae, Muridae and Sciuridae (3) (Fig. 6). It also recorded that 13 reptiles (7 family and 12 genera) (Fig. 7) and 50 birds (20 family and 43 genera).during study period (Fig. 8).

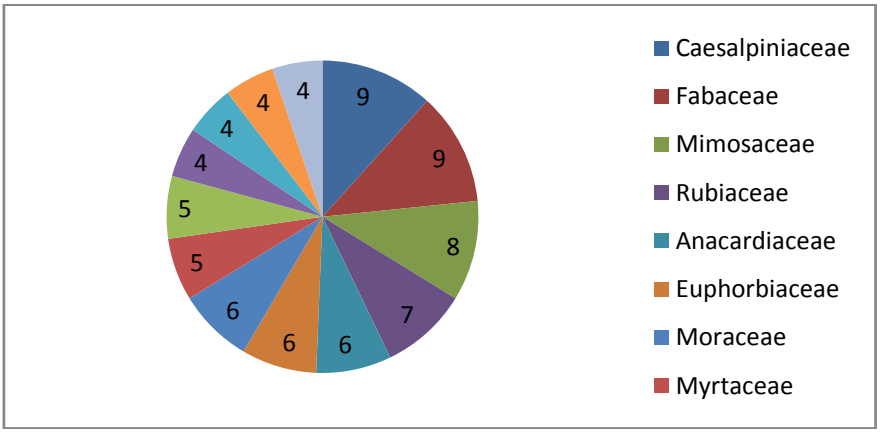

Fig. 3. Family basis of woody vegetation of Bonaigarh Forest Division, Sundergarh, Odisha

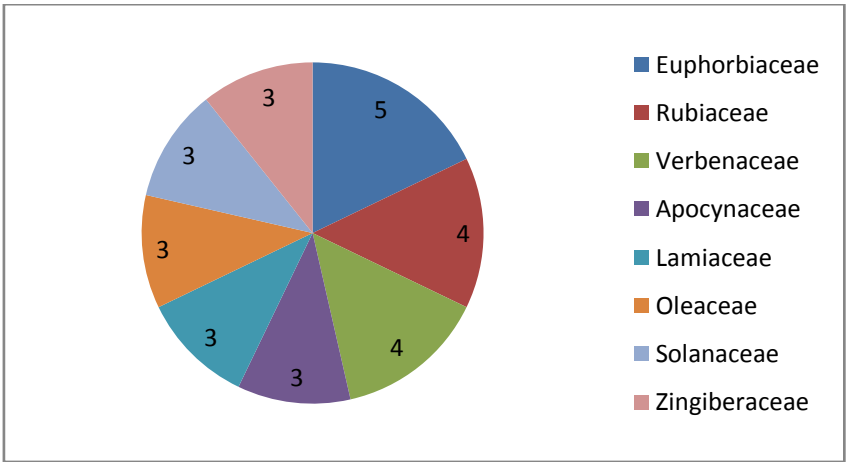

Fig. 4. Family basis of herbs vegetation of Bonaigarh Forest Division, Sundergarh, Odisha

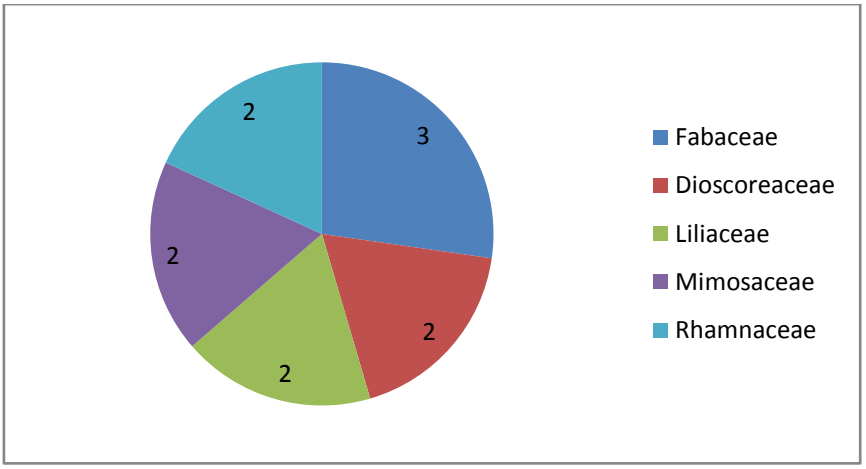

Fig 5. Family basis of shrubs vegetation of Bonaigarh Forest Division, Sundergarh, Odisha

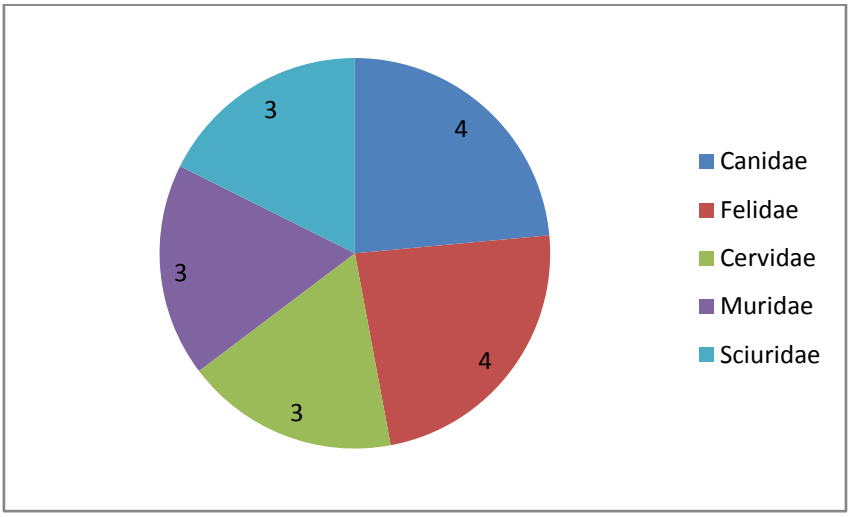

Fig 6. Family basis of fauna diversity of Bonaigarh Forest Division, Sundergarh, Odisha

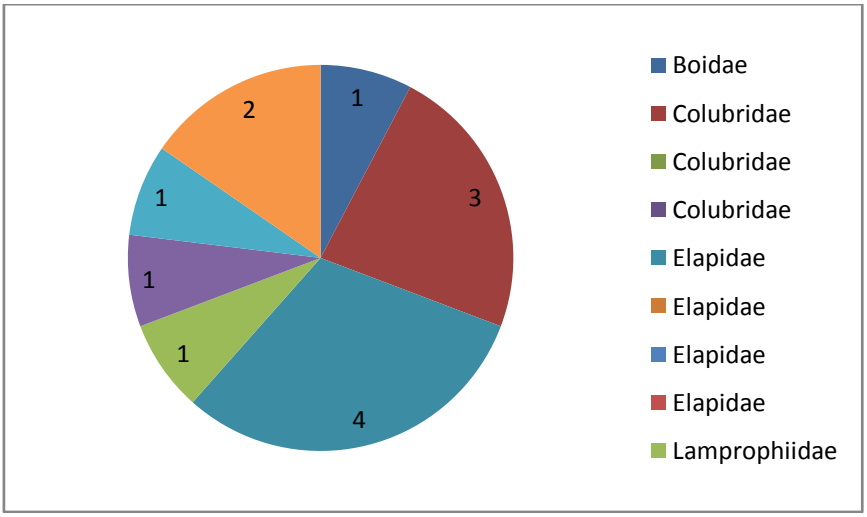

Fig 7. Family basis of snake's diversity of Bonaigarh Forest Division, Sundergarh, Odisha

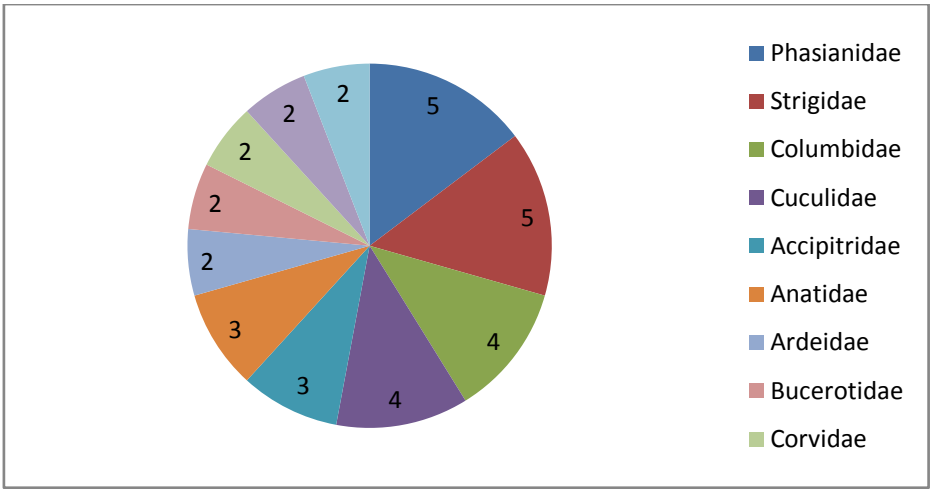

Fig 8. Family basis of bird's diversity of Bonaigarh Forest Division, Sundergarh, Odisha

The study of floristic composition and phytosociological attributes are useful for comparing one community with the other from season to season and year to year (Singh, 1976). Each species within a community has large measure of its structural and functional individualism and has more or less different ecological amplitude and modality (Singh and Joshi, 1979). The species diversity reflects the gene pool and adaptation potential of the community (Odum, 1971) and also distribution of individuals among the species in a particular habitat. Reports of Tewari (1982), Badauni and Sharma (1996), Lal *et al*. (1994), Ilorkar and Khatri (2003) have explored the importance of quantitative information. These results are supported by similar studies at various sites in Shervarayan hills (Kaduvul and Parthasarathy 1999); Ramgadhi forest range, Gujarat (Vediya and Kharadi, 2012); Darlaghat Wildlife Sanctuary, Himachal Pradesh (Thakur et al., 2012); Waghai Forest Range in Dang District, Gujarat (Kumar, 2012; Kumar et al., 2013; Kumar 2016); Sivagangai district, Tamilnadu (Sundarapandian and Subhiah, 2015); Doon Valley, Uttrakhand (Mohammad and Joshi, 2015) and Chikhali Taluka of Navsari district, Gujarat (Kumar, 2016).

Table 1. Woody vegetation diversity of Bonaigarh Forest Division, Sundergarh district, Odisha

TREES			
Sl no.	**Botanical name**	**Local name**	**Family**
1	*Acacia auriculiformis*	Sunajhari	Mimosaceae
2	*Acacia catechu*	Khaira	Mimosaceae
3	*Acacia leucophloea*	Gohira	Mimosaceae
4	*Acacia nilotica*	Babul	Mimosaceae
5	*Adina cordifolia*	Haldu(Halamda)	Rubiaceae
6	*Aegle marmelos*	Belo	Rutaceae
7	*Alangium lamarckii*	Ankula	Alangiaceae
8	*Albizia lebbeck*	Kalasiris	Mimosaceae
9	*Albizia procera*	Safed siris	Mimosaceae
10	*Alstonia scholaris*	Chhatin	Apocynaceae
11	*Anacardium occidentale*	Kaju(Lanka Badam)	Anacardiaceae
12	*Annona reticulata*	Ram phala	Annonaceae
13	*Anogeissus accuminata*	Phasi	Combretaceae
14	*Anogeissus latifolia*	Dhaura	Combretaceae
15	*Anthocephalus cadamba*	Kadamba	Rubiaceae
16	*Artocarpus heterophyllus*	Panas	Moraceae
17	*Artocarpus lakoocha*	Jeoktba (Makeyjack)	Moraceae
18	*Azadiracta indica*	Neem/Limba	Meliaceae
19	*Barringtonia acutangula*	Hinjal	Barringtoniaceae
20	*Bauhinia purpurea*	Kuilari (Debakanchan)	Caesalpinlaceae
21	*Bauhinia racemosa*	Ambalata	Caesalpiniaceae
22	*Bauhinia variegata*	Kanchan	Caesalpiniaceae

23	*Bixa orellana*	Japhra	Bixaceae
24	*Bombax ceiba*	Semili	Bombacaceae
25	*Borassus flabellifer*	Tala	Arecaceae
26	*Boswellia serrata*	Salai	Burseraceae
28	*Bridellia retusa*	Kasi	Euphorbiaceae
29	*Buchanania lanzan*	Char	Anacardiaceae
30	*Bursera serrata*	Andiri (Rajmai)	Burseraceae
31	*Butea monosperma*	Palasa	Fabaceae
32	*Callicarpa arborea*	Badopatri	Verbenaceae
33	*Caryota urens*	Salap(Toddypalm)	Arecaceae
34	*Cascabela thevetia*	Koniyari	Apocynaceae
35	*Cassia fistula*	Sunari	Caesalpiniaceae
36	*Cassia siamea*	Chakundi	Caesalpinlaceae
37	*Chloroxylon swietenia*	Bheru	Rutaceae
38	*Cleistanthus collinus*	Karda	Euphorbiaceae
39	*Cochlospermum gossipium*	Goniari (Kanta palas)	Cochlospermaceae
40	*Crateva religiosa/ C.nurvala*	Barun	Capparaceae
41	*Dalbergia latifolia*	Pahadi sisoo	Fabaceae
42	*Dalbergia sissoo*	Sisoo	Fabaceae
43	*Dalborgia paniculata*	Barbakulia	Fabaceae
44	*Dellenia pentagyna*	Rai	Dilleniaceae
45	*Delonix regia*	Krushna Chuda/Gulmohar	Caesalpinlaceae
46	*Desmodium oojeinensis*	Bandhan	Fabaceae
47	*Diospyros malabarica*	Mankada kendu	Ebenaceae
48	*Diospyros melanoxylon*	Kendu	Ebenaceae
49	*Diospyros montana*	Haldi	Ebenaceae
50	*Emblica officinalis*	Aonla	Euphorbiaceae
51	*Erythrina suberosa*	Balthia(paldhua)	Fabaceae
52	*Eucalyptus globulus*	Blue gum (Nilagiri)	Myrtaceae
53	*Eucalyptus species*	Nilagiri	Myrtaceae
54	*Feronia elephantum*	Kaitho	Rutaceae
55	*Ficus benghalensis*	Baro	Moraceae
56	*Ficus glomerata*	Dimiri	Moraceae
57	*Ficus religiosa*	Pipal	Moraceae
58	*Gardenia latifolia*	Dam kuruda	Rubiaceae
59	*Garuga pinnata*	Kenkat	Burseraceae
60	*Gmelina arborea*	Gambhari	Verbenaceae
61	*Grevellia robusta*	Silver oak	Proteaceae
62	*Grewia tiliifolia*	Dhaman	Tiliaceae
63	*Holoptelia integrifolia*	Dauranja	Ulmaceae
64	*Hymenodictyon excellsum*	Kansa	Rubiaceae
65	*Jacaranda mimosifolia*	Bishnuchuda	Bignoniaceae
66	*Kydia calycina*	Bankapasia	Malvaceae
67	*Lagerstroemia parviflora*	Sennha (Sidha)	Lythraceae
68	*Lannea coromandelica*	Moi	Anacardiaceae
69	*Limonia acidissima*	Bhenta	Rutaceae
70	*Litsea macrophylla*	Gadapanasa (Baghoari)	Lauraceae
71	*Macaranga peltata*	Gondaguria	Euphorbiaceae
72	*Madhuca indica*	Mahul	Sapotaceae
73	*Mallotus phillippensis*	Kamalagundi	Euphorbiaceae
74	*Mangifera indica*	Amba	Anacardiaceae

75	*Michelia champaca*	Champa	Magnoliaceae
76	*Miliusa velutina*	Gandhapalasa	Annonaceae
77	*Mitragyna parvifolia*	Mundi	Rubiaceae
78	*Moringa tinctoria*	Achu	Rubiaceae
79	*Moringa oleifera*	Munagha(Sajana)	Moringaceae
80	*Oroxylum indicum*	Phemphana	Bignoniaceae
81	*Peltophorum ferrugineum*	Radhachuda	Caesalpiniaceae
82	*Phoenix sylvestris*	Khajuri	Arecaceae
83	*Pinus insularis/P.khasia*	Pine(Khasi)	Pinaceae
84	*Polyalthia longifolia*	Debadaru (Ashoka)	Annonaceae
85	*Pongamia pinnata*	Karanja	Fabaceae
86	*Psidium guajava*	Amrud(Pijuli)	Myrtaceae
87	*Pterocarpus marsupium*	Bija	Fabaceae
88	*Pterospermum heyneamum*	Giringa	Sterculiaceae
89	*Pterospermum heyneanum*	Machhkund/Giringa	Sterculiaceae
90	*Pterospermum suaveolens*	Padhel (Chuin patoli)	Sterculiaceae
91	*Samanea saman*	Chakunda(Bada)/Rain tree	Mimosaceae
92	*Santalum album*	Chandan	Santalaceae
93	*Sapindus mucorosis*	Rithaphala (Muktamanja)	Sapindaceae
94	*Saraca asoca*	Ashoka	Caesalpinlaceae
95	*Schleichera oleosa*	Kusum	Sapindaceae
96	*Schrebera swietenioides*	Mokha/Mukha	Oleaceae
97	*Semecarpus anacardium*	Bhalia	Anacardiaceae
98	*Sesbania grandiflora*	Agasti	Fabaceae
99	*Shorea robusta*	Sal	Dipterocarpaceae
100	*Soymida febrifuga*	Rohini	Meliaceae
101	*Spathodea campanulata*	Tulip tree(African)	Bignoniaceae
102	*Spondius mangifera*	Ambada	Anacardiaceae
103	*Sterculia urens*	Genduli	Sterculiaceae
104	*Strebulus aspera*	Sahada	Moraceae
105	*Strychnos nux-vomica*	Kochila	Strychnaceae
106	*Swietenia mahogani*	Mahagni	Meliaceae
107	*Sysygium cumini*	Jamun	Myrtaceae
108	*Syzygium operculate*	Pitajamu (poi-gam)	Myrtaceae
109	*Tamarindus indica*	Tentuli	Caesalpiniaceae
110	*Tamilnadia uliginosa*	Thelka	Rubiaceae
111	*Tectona grandis*	Saguan (Teak)	Verbenaceae
112	*Terminalia bellirica*	Bahada	Combretaceae
113	*Terminalia chebula*	Harida	Combretaceae
114	*Terminalia tomentosa*	Sahaja(Asan)	Combretaceae
115	*Toona ciliata*	Toon	Meliaceae
116	*Trewia nudiflora*	Panigambhari	Euphorbiaceae
117	*Vitex peduncularis*	Chadaigudi	Verbenaceae
118	*Wrightia tomentosa*	Bod-kurhein	Apocynaceae
119	*Xylia xylocarpa*	Tangini	Mimosaceae
120	*Zizyphus mauritiana*	Ghanto	Rhamnaceae

Table 2. Shrubs and herbs diversity of Bonaigarh Forest Division, Sundergarh district, Odisha

HERBS AND SHRUBS			
Sl. No.	**Botanical name**	**Local name**	**Family**
1	*Achyranthes aspera*	Apamaranga	Amaranthaceae
2	*Agava sisalana*	Sisal	Agavaceae
3	*Agave americana*	Murga	Agavaceae
4	*Andrographis paniculata*	Bhuin-Nim (Chirecta)(Kala-megh)	Acanthaceae
5	*Annona squamosa*	Ata/Seetaphal	Annonaceae
6	*Aristolochia bracteata*	Hansalata	Aristolochiaceae
7	*Boerhavia diffusa*	Punarnava/Pugincannava	Nyctaginaceae
8	*Calotropis procera*	Arakha(arka)	Asclepiadaceae
9	*Casearia tomentosa*	Khakada (Kakali)	Flacourtiaceae
10	*Cassia tora*	Dhola chakunda	Caesalpiniaceae
11	*Clerodendron infortunatum*	Bhant	Verbenaceae
12	*Colocasia esculenta*	Saru	Araceae
13	*Curcuma amada*	Amada/Ama-haldi	Zingiberaceae
14	*Curcuma aromatica*	Palua/Bana-haldi	Zingiberaceae
15	*Curiuma angustifolia*	Palma/Palagunda	Zingiberaceae
16	*Datura stramonium*	Datura (Duddura)	Solanaceae
17	*Eupatorium odoratum*	Pokasunga	Asteraceae
18	*Euphorbia hirta*	Hariharika	Euphorbiaceae
19	*Euphorbia tirucalli*	Khadisiju	Euphorbiaceae
20	*Flemingia chappar*	Ranikathi	Fabaceae
21	*Gardenia gummifera*	Khuradu	Rubiaceae
22	*Grewia hirsuta*	Sunaragoda	Tiliaceae
23	*Helicteres isora*	Antia (Murmuria)	Sterculiaceae
24	*Hemidesmus indicus*	Anata-mula	Asclepiadaceae
25	*Holarrhena antidysenterica*	Kurei/Kurmi	Apocynaceae
26	*Hydrocotyle asiatica*	Brahmi/Thalkuni	Apiaceae
27	*Indigofera pulchela*	Girli	Fabaceae
28	*Ipomea carnea*	Besharam/Omor	Convolvulaceae
29	*Ixora parviflora*	Kila keruan	Rubiaceae
30	*Jasminum humile*	Kundo-phul	Oleaceae
31	*Jasminum pubescens*	Kunda phula	Oleaceae
32	*Jatropha carcus*	Baigaba	Euphorbiaceae
33	*Jatropha gossypifolia*	Nilabaigaba	Euphorbiaceae
34	*Justicia adhatoda*	Basanga	Acanthaceae
35	*Lantana camara*	Nagauiri(Nagaboiri)	Verbenaceae
36	*Lawsonia inermis*	Mehandi(Manjuati)	Lythraceae
37	*Murraya koenigii*	Bhursunga (Mirsinga pattra)	Rutaceae
38	*Murraya exotica*	Kaminic	Rutaceae
39	*Nerium indicum*	Karibira	Apocynaceae
40	*Nyctanthes arbortriatis*	Gangasiuli (gotikhadika)	Oleaceae
41	*Ocimum basilicum*	Tulasi(Dhala)	Lamiaceae
42	*Ocimum gratissimum*	Bana-tulasi	Lamiaceae
43	*Ocimum zanctum*	Tulasi (Kala)	Lamiaceae
44	*Phoenix acaulis*	Ban-Khajuri	Arecaceae
45	*Pithecellobium dulce*	Sima koina	Mimosaceae
46	*Plumbago rosea/P.indica*	Rakta chitaparu(Lal-chita)	Plumbaginaceae
47	*Plumbago zeylanica*	Sitaparu/Dhola-chitaparu	Plumbaginaceae
48	*Premna herbacea*	Gudamari	Verbenaceae
49	*Randia dumetorum*	Mohana (Pottua)	Rubiaceae
50	*Rauvolfia serpentina*	Patalgaruda	Apocynaceae
51	*Ricinus communis*	Jada	Euphorbiaceae
52	*Sida cordifolia*	Bisiripi/Bajramuli	Malvaceae
53	*Solanum xanthocarpum*	Bheji Baigana(Ankaranti)	Solanaceae
54	*Tribulus terrestris*	Gokhara	Averrhoaceae

55	*Tridax procumbens*	Bisalya-karani/Bhumi poksungo	Asteraceae
56	*Vitex negundo*	Nirgundi (Begunia)	Verbenaceae
57	*Wendlandia tinctoria*	Tilai	Rubiaceae
58	*Withania somnifera*	Ashwagandha	Solanaceae
59	*Woodfordia fructicosa*	Dhatiki	Lythraceae
60	*Ziziphus mauritiana*	Barkoli	Rhamnaceae
61	*Zizyphus oenoplea*	Kanteikoli	Rhamnaceae

Table 3. Climbers vegetation diversity of Bonaigarh Forest Division, Sundergarh district, Odisha

CLIMBERS			
Sl. No.	**Botanical name**	**Local name**	**Family**
1	*Abrus precatorius*	Gunja (Kaincha)	Fabaceae
2	*Acacia sinuata*	Dantari (Nali-Kantia)	Mimosaceae
3	*Asperagus racemosus*	Satawar	Liliaceae
4	*Bauhinia vahlii*	Siali	Caesalpiniaceae
5	*Butea superba*	Lata palasa	Fabaceae
6	*Cassytha filiformis*	Nirmuli	Cassytha
7	*Combretum decandrum*	Atundi	Combretaceae
8	*Cryptolepis buchananii*	Dudhi-mal	Periplocaceae
9	*Dioscorea deltoidea*	Desi Alu	Dioscoreaceae
10	*Dioscorea hispida*	Karu Kando/Kuliha kanda	Dioscoreaceae
11	*Entada acandens/E.pursaitha*	Gilo	Mimosaceae
12	*Gloriosa superba*	Meheria phulo	Liliaceae
13	*Hiptage madablota*	Madhumalati	Malpighiaceae
14	*Ipomea reptans*	Kalmi sag	Convolvulaceae
15	*Loranthus scurrula*	Madang	Loranthaceae
16	*Millettia auriculata*	Arkawla	Fabaceae
17	*Smilax macrophylla*	Muturi	Smilaceae
18	*Ventilago denticulata*	Pitchuli/Kantamali	Rhamnaceae
19	*Ventilago madraspatana*	Petchurimal(Torida)	Rhamnaceae

Table 4. Grasses vegetation diversity of Bonaigarh Forest Division, Sundergarh district, Odisha

GRASSES			
Sl. No.	**Botanical name**	**Local name**	**Family**
1	*Aristida setacea*	Ghodalanji	Poaceae
2	*Arundinella setosa*	Jharu	Poaceae
3	*Bambusa arundinacea*	Daba Bauns (Kanta bamboo)	Poaceae
4	*Bambusa nutans*	Badia Bauns	Poaceae
5	*Bambusa tulda*	Taleda Bauns	Poaceae
6	*Bambusa vulgaris*	Sundarkani	Poaceae
7	*Bothriochloa pertma*	Basana	Poaceae
8	*Bothriochloa bladhii*	Gonda bena	Poaceae
9	*Chrysopogon gryllus*	Guguchia	Poaceae
10	*Cymbopogon flexuosus*	Dhanwaritari	Poaceae
11	*Cymbopogon matinii*	Rosa grass	Poaceae
12	*Cynodon dactylon*	Duba (Dhubo)	Poaceae
13	*Dendricalamus strictus*	Bauns(Salia bamboo)	Poaceae
14	*Eragrostis coaretata*	Koji jhipa (Kuti)	Poaceae
15	*Eragrostis unioloides*	Phuri Phuri	Poaceae
16	*Eulaliopsis binata*	Sabai (Panasi)	Poaceae
17	*Heteropogon contortus*	Sinkulia	Poaceae
18	*Ichaemum rugosum*	Tuli	Poaceae
19	*Imperata arundinaceae*	Chhana	Poaceae
20	*Oryza rufipogon*	Balunga	Poaceae
21	*Phragmites karka*	Noto	Poaceae
22	*Saccharum spontaneum*	Kasa tandi (Chadeia)	Poaceae
23	*Saccharum spontaneum*	Tandi (kasatandi)	Poaceae
24	*Thysanolaena maxima*	Phulbadhun (Phul Jhadu)	Poaceae
25	*Vetiveria zizaniodes*	Khus-Khus (Bena)	Poaceae

Table 5. Fauna diversity of Bonaigarh Forest Division, Sundergarh district, Odisha

MAMMALS				
Sl. No.	**Latin name**	**Local name**	**English name**	**Family**
1	*Axis axis*	Harina	Spotted deer	Cervidae
2	*Canis aureus*	Bilua	Jackal	Canidae
3	*Canis lupus*	Ramsiali	Wolf	Canidae
4	*Cervus unicolor*	Sambar	Sambar	Cervidae
5	*Cuon alpinus*	Balia Kukur	Wild dog or Dholes	Canidae
6	*Cynopterus sphinx*	Badudi	Shortnosed fruitbat	Pteropodidae
7	*Felis bengalensis*	Cheetah Biradi	Leopard cat	Felidae
8	*Felis chaus*	Banbiradi	Jungle cat	Felidae
9	*Funambulus palmarum*	Gunduchimusa	3 stripped palm squirrel	Sciuridae
10	*Funambulus pennantii*	Gunduchimusa	5 stripped palm squirrel	Sciuridae
11	*Herpestes auropunctatus*	Neula (Kuji)	Small indian mangoose	Herpestidae
12	*Herpestes edwardsi*	Neula (Hatia)	Common mangoose	Herpestidae
13	*Hyaena hyaena*	Heta Bagha	Hyaena	Hyaenidae
14	*Hystrix indica*	Jhinka	Porcupine	Hystricidae
15	*Lepus nigricollis*	Thekua	Hare	Leporidae
16	*Lutra perspicillata*	Odha	Smooth Indian otter	Mustelidae
17	*Macaca mulatta*	Mankada (Pati)	Rhesus monkey	Cercopithecidae
18	*Madromys blanfordi*	Musa	White tailed wood rat	Muridae
19	*Manis crassicaudata*	Bagrakapta	Pangolin	Manidae
20	*Mellivora capensis*	Gada Bhalu	Ratel	Mustelidae
21	*Melursus ursinus*	Bhalu	Sloth bear	Ursidae
22	*Muntiacus muntijak*	Kutura	Barking deer	Cervidae
23	*Panthera pardus*	Kalarapatria Bagha	Leopard (Panther)	Felidae
24	*Panthera tigris*	Bagha	Tiger	Felidae
25	*Paradoxurus hermaphroditus*	Saliapatani	Toddycat	Viverridae
26	*Presbytis entellus*	Mankada (Hanu)	Monkey	Cercopithecidae
27	*Rattus rattus*	Musa	Rat	Muridae
28	*Ratufa indica*	Musa (Nepali)	Gaint indian squirrel	Sciuridae
29	*Suncus murinus*	Chhuchhundra	Grey musk shrew	Soricidae
30	*Sus scrofa cristatus*	Barha	Wild boar	Suidae
31	*Tetracerus quadricornis*	Chausingha	The Four horned antelope	Bovidae
32	*Tragulus meminna*	Gurandi	Mouse deer	Tragulidae
33	*Vandeleuria oleracea*	Musa	Long tailed tree mouse	Muridae
34	*Viverricula indica*	Saliapatani	Small Indian civet	Viverridae
35	*Vulpes bengalensis*	Kokisiali	Fox	Canidae

Table 6. Reptile diversity (Snake) of Bonaigarh Forest Division, Sundergarh district, Odisha

SNAKES				
Sl. No.	**Latin name**	**Local name**	**English name**	**Family**
1	*Ahaetulla spp*	Kandanali	Tree snake	Lamprophiidae
2	*Boa constrictor*	Boda	Common boa	Boidae
3	*Bungarus caeruleus*	Chiti	Common Indian krait	Elapidae
4	*Bungarus candidus*	Rana	Krait	Elapidae
5	*Dryophis nasutus*	Laudankia	Common green whipsnake	Colubridae
6	*Echis carinatus*	Dhulinag	Saw scale viper	Viperidae
7	*Naja naja*	Naga (Gokhar)	Indian cobra	Elapidae
8	*Natrix piscator*	Pani dhanda	Checkeered keel	Colubridae

			back	
9	*Ophiophagus hannah*	Ahiraja	King cobra	Elapidae
10	*Ptyas mucosus*	Dhamana	Rat snake	Colubridae
11	*Python molurus*	Ajagarh	Indian python	Pythonidae
12	*Typhlops braminus*	Teli sapa	Common blind snake	Typhlopidae
13	*Vipera russelli*	Dhandaboda	Russels viper	Viperidae

Table 7. Birds diversity of Bonaigarh Forest Division, Sundergarh district, Odisha

BIRDS				
Sl. No.	**Latin name**	**Local name**	**English name**	**Family**
1	*Acridotheres tristis*	Bani	Myna indian	Sturnidae
2	*Anas crecca*	Batak	Teal common	Anatidae
3	*Anas poecilorhyncha*	Hansa	Duck Grey or spotbill	Anatidae
4	*Anastomus oscitans*	Gandalia	Asian openbilled stork	Ciconiidae
5	*Anthracoceros coronatus*	Kuchilakhai	Hornbill malabar pied	Bucerotidae
6	*Apus affinis*	Chataka	Swift House	Apodidae
7	*Ardeola grayii*	Kantiabaga	Heron pond or paddy bird	Ardeidae
8	*Athene brama*	Pecha	Owlet spotted	Strigidae
9	*Bubulcus ibis*	Baga	Egret cattle	Ardeidae
10	*Bubo bubo*	Pecha	Owl indian greathorned	Strigidae
11	*Casarca ferruginea*	Chakua-chakoi	Duck Ruddy sheldrake	Anatidae
12	*Centropus sinensis*	Kumbhatua	Crowpheasant	Cuculidae
13	*Ceryle rudis*	Machharanka	King fisher pied	Alcedinidae
14	*Clamator jacobinus*	Chatak	Cuckoo pied crested	Cuculidae
15	*Columba livia*	Deuliapara	Pigeon Bluerock	Columbidae
16	*Copsychus saularis*	Nilkantha	Robin magpie	Muscicapidae
17	*Coracias benghalensis*	Bhadbhadalia	Roller or blue jay	Coraciidae
18	*Corvus macrorhynchos*	Damara kau	Crow jungle	Corvidae
19	*Corvus splendens*	Kau	Crow house	Corvidae
20	*Cuculus micropterus*	Koili	Cuckoo indian	Cuculidae
21	*Cuculus varius*	Koili	Cuckoo common Hawk	Cuculidae
22	*Dicrurus macrocercus*	Kajalpati	Kajalpati	Dicruridae
23	*Dicrurus paradiseus*	Bhrungaraja	Drongo rocket tailed	Dicruridae
24	*Dinopium benghalense*	Kathkhumpa	Woodpecker golden backed	Picidae
25	*Ducula aenea*	Para	Pigeon imperial green	Columbidae
26	*Francolinus pondicerianus*	Teetiri	Patridge grey	Phasianidae
27	*Gallus gallus*	Banakukuda	Jungle fowl red	Phasianidae
28	*Gallus sonneratii*	Banakukuda	Jungle fowl grey	Phasianidae
29	*Gracula religiosa*	Sari	Myna hill	Sturnidae
30	*Gyps bengalensis*	Saguna	Vulture white backedor bengal	Accipitridae
31	*Haliastur indus*	Sankhachilla	Kite Brahminy	Accipitridae
32	*Milvus migrans*	Chilla	Kite common pariak	Accipitridae
33	*Oriolus xanthornus*	Haladi basanta	Oriole black headed	Oriolidae
34	*Orthotomus sutorius*	Phutki	Tailor bird	Cisticolidae
35	*Passer domesticus*	Gharchatia	House sparrow	Passeridae
36	*Pavo cristatus*	Mayur	Peafowl common	Phasianidae
37	*Perdicula asiatica*	Teetri	Quail Bush jungle	Phasianidae
38	*Phalacrocora niger*	Panikua	Cormorant little	Phalacrocoracidae
39	*Picoides nanus*	Kathkhumpa	Woodpecker	Picidae
40	*Ploceus phillippinus*	Baya	Baya weaver bird	Ploceidae
41	*Podiceps ruficollis*	Hansarali	Grebe little or	Podicipedidae

			Debachick	
42	*Psittacula eupatria*	Sua	Parakeet large indian	Psittaculidae
43	*Pycnonotus cafer*	Bulbul or Gobrachadhei	Bulbul (red vented)	Pycnonotidae
44	*Pycnonotus jocosus*	Pahadi bulbul	Bulbul (red whiskered)	Pycnonotidae
45	*Streptopelia chinensis*	Kapota	Dove spotted	Columbidae
46	*Streptopelia decaocto*	Kapota	Dove king	Columbidae
47	*Sturnus contra*	Ghukalika	Myna pied	Sturnidae
48	*Tockus birostris*	Bhaliakhai	Hornbill Common grey	Bucerotidae
49	*Turdoides caudatus*	Kunda	Babbler common	Leiothrichidae
50	*Turnix suscitator*	Gunduri	Quail blue legged	Turnicidae

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