

BEFORE THE NATIONAL GREEN TRIBUNAL,  
SOUTHERN ZONAL BENCH AT CHENNAI

I. A. No. 81 of 2022

In

Appeal. No. 82 OF 2021

Between:

MAHESH MAMINDLA & Another

... APPELLANTS

VERSUS

STATE OF TELANGANA And Others

..... Respondents

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THROUGH  
ADVOCATES FOR THE 2<sup>nd</sup> RESPONDENT

Y. RAMA RAO

B. LAKSHMI NARASIMHAN

Y. SAI SANKALP, Advocates,

Plot No. 550/C, Road No. 92, Jubilee Hills, Hyderabad- 500 033, Telangana

Mob: 7667967963, 9849012022



**TRANSMISSION CORPORATION OF TELANGANA LTD.**

From  
The Executive Engineer,  
400KV/Const-II  
Metro,  
Hyderabad.

To  
The Principal Chief Conservator of Forests,  
(Head of Forest Force), Aranya Bhavan,  
Saifabad,  
Hyderabad – 500004.

**Lr.No.EE/400KV/Const-II/Metro/Hyd/F. R'durg line /D.No. 33 /21, Dt. 17-04-2021.**

Sir,

Sub:- TSTRANSCO – Erection of 400KV Twin HTLS Transmission line from 400KV Kethireddypally SS to 400KV Rayadurg GIS in the execution of 400KV DC line on Monopoles from TSPA Junction to ORR junction – Diversion of 6.7076 Ha of forest land in Shamshabad division – Additional information sought - Submitted – Regarding.

- Ref:-
- 1) P.O.No.209/OM-11/CE/400kV/SE-2/D1-A1/e-EHVT-01/2018/D.No:731/18, Dt:29.09.2018.
  - 2) P.O.No.210/OC-12/CE/400kV/SE-II/D1-A1/e-EHVT-01/2018/D.No.732/18,Dt:29-09-2018.
  - 3) Lr. No. CE/400KV/SE-II/D1-A4/F. Rayadurg/ D.No.310/19, Dt : 01-06-2019.
  - 4) Lr.No.EE/400KV/Const-II/Metro/Hyd/F. Rayadurg line/D.No. 659/19, Dt. 09-09-2019.
  - 5) Lr.No.CGM(T)/DGM(Elec)/HGCL/8025/2018-19, Dt.08-02-2019.
  - 6) GoI, MoEF & CC, IRO, Hyderabad F.No.4-TSCI180/2021-HYD, 09-04-2021.
  - 7) Ref. No. 13470/2019/FCA-4, Dt. 09-04-2021.

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The TSTRANSCO is proposed to erect the 400KV Twin HTLS Transmission line from 400KV Kethireddypally SS to 400KV Rayadurg GIS to meet the upcoming power demand (500MW) in IT SEZ of HITECHCITY and Financial Dist, Gachibowli as per the directions of Telangana Govt. on priority basis.

As per the approved route vide ref. 3<sup>rd</sup> cited above, some part of the line routed through the edge of the Mrugavani forest along ORR Service Road, Chilkur village limits. Accordingly, proposal was submitted vide ref. 4<sup>th</sup> cited above, for approval of diversion of forest land for laying of subject 400KV line through Mrugavani forest for a length of 1.458 KM with a corridor width of 46 Mtrs, Area-6.7076 Hectars.

With ref. to 6<sup>th</sup> cited above, the Government of India, MoEF & CC, Integrated Regional Office, Hyderabad has requested to furnish certain information on the above subject and the same is forwarded vide ref. 7<sup>th</sup> cited above to submit information on the above.

In this regard, the following is herewith submitted, pertaining to Para (Point) No. 2 : 2 Nos. alternate routes were examined along the original route as shown in the Topo sheet & Google map. The merits & demerits of each route is as given below.

(a) The original route (Green line)

Line length – 41.761 km

Forest length in the original route – 1.465 km

It is the best feasible route, easily executable without ROW with minimum forest land effected and passing through the edge of Mrugavani Forest along ORR.

(b) Alternate route (1) (Blue line)

Line length – 40.887 km

Forest length in the Alternate route (1) – 1.8 km

In this route, length of the forest area effected is maximum and line route is passing through middle of Mrugavani Forest. Hence, this route is not considered.

(c) Alternate route (2) (Yellow line)

Line length 39.757 km

Forest length in the Alternate route (2) – 1.5 km

This route is proposed with some part of the line about 12KM along the inner side of the ORR Green corridor having forest length effected 1.5 KM which is already diverted to HMDA for ORR. But, HMDA/HGCL rejected our proposal vide ref. 5<sup>th</sup> cited above stating that the above corridor is reserved for Metro Rail project. Hence, this route was not feasible.

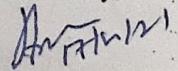
Also laying of 400KV EHV line in the centre of ORR avoiding forest land is not considered in view of Traffic safety reasons.

Hence, it is requested to arrange approval for diversion of 1.465 KM of Forest land along the Green line in Mrugavani forest for 6.7076 Hectars at the earliest as the proposed route is more feasible compare to other route. It is also to submit that many software companies are indented to extend the power supply to Hi-Tech city.

Encl: 1) Google map showing the proposed routes

2) Topo sheet.

Yours faithfully,



**EXECUTIVE ENGINEER,  
400KV/Const-II/Metro/Hyd.**

**Copy Submitted to:**

The Chief Engineer/400KV/TRANSCO/VS/Hyderabad.

The Superintending Engineer/400KV/Construction/Metro/CTI/GTS Colony/Hyd.

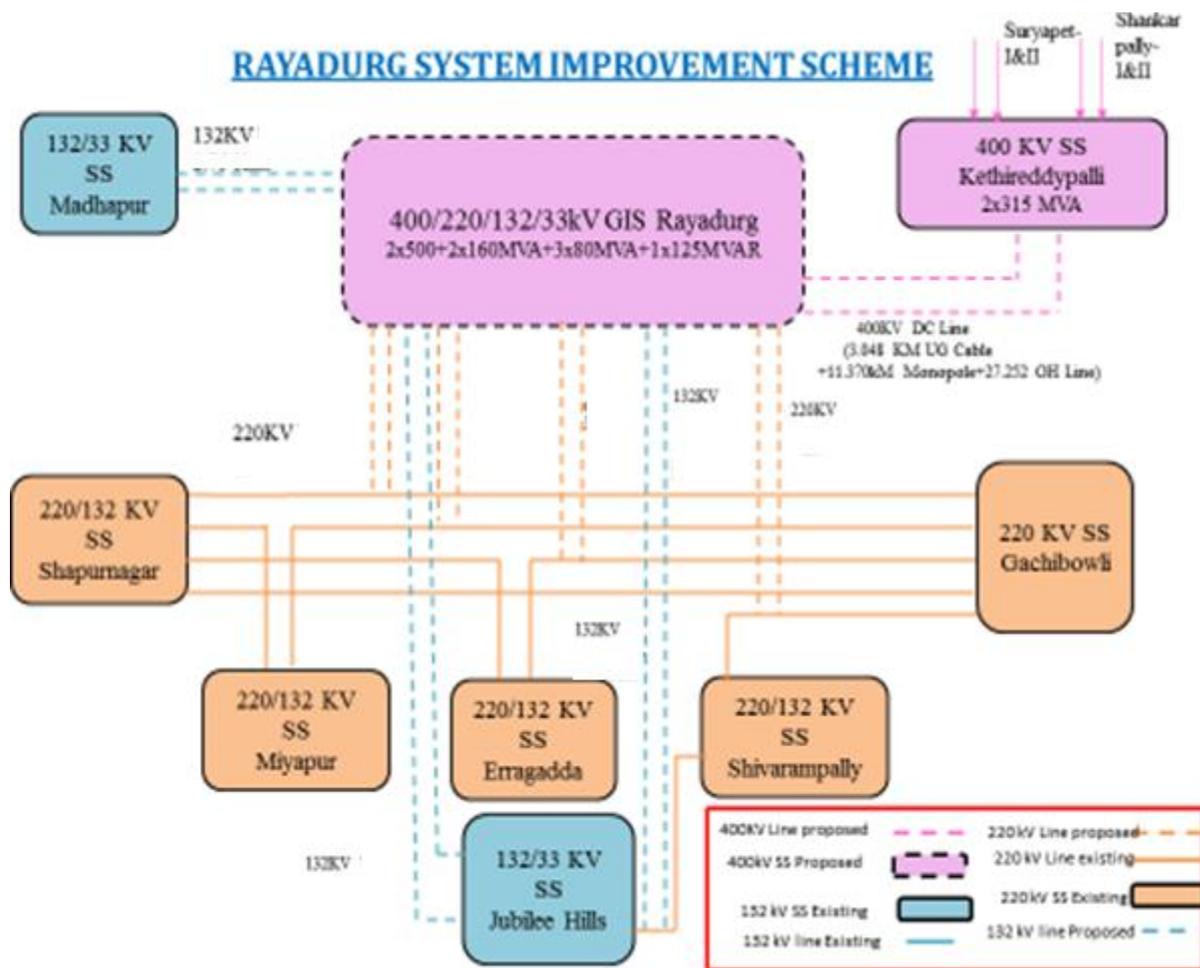
The Forest Divisional Officer/Shamshabad/Hyderabad.



## **RAYADURG SYSTEM IMPROVEMENT SCHEME**

- Meanwhile, Govt. of Telangana has envisaged *Telangana State Industrial Project Approval & Self certification System* (TS-iPASS) and hence rapid Industrialization is expected in & around Hyderabad area.
- IT Companies are establishing offices around Rayadurg and Gachibowli areas.
- Moreover, the Hyderabad city load has reached around 3000MW.
- As per study, the approximate load growth in GHMC area is about 250 MW per year.
- To meet load growth to an extent of 10 to 15% due to industrialization and IT industries, a substation has to be constructed in the vicinity of Gachibowli and Rayadurg area as **there is no provision for catering the above load from the nearby substations.**
- In view of above, construction of 400/220/132/33kV Rayadurg GIS was proposed along with the connected network. Accordingly, system studies were conducted and it is noted that with the construction of 400kV GIS at Rayadurg, a reliable power can be catered directly to five 220kV Substations (i.e., Miyapur, Gachibowli, Shivrampally, Erragadda and Shapur Nagar) and two 132kV Substations (i.e., Madhapur, Jubilee Hills) which in turn improves the system voltage.
- Hence, TSTRANSCO has proposed to construct 400/220/132 kV Rayadurg GIS in the prime land available at Rayadurg to an extent of 5 Acres .
- However, TSTRANSCO have proposed to take up the execution of 400kV Rayadurg GIS Substation along with its downstream network separately under System Improvement Scheme
- Further CEA have accorded approval for construction of 400/220/132 kV Rayadurg GIS & connected network during 41<sup>st</sup> meeting of Standing Committee on Power System Planning for Southern Region (SCPSPSR) held on 22.09.2017.

- The scheme connectivity of the above schemes are as below



#### Brief Write up on Rayadurg Project:

- For the first time, TSTRANSCO has constructed 400/220/132/33kV Gas Insulated Substation at Rayadurg (Hyderabad) in an area of 5 Acres land, which is 1/12<sup>th</sup> amount of space required for conventional type 400kV SS.
- The Rayadurg Substation has four voltage levels i.e. 400kV, 220kV, 132kV and 33kV comprises of 2Nos 500MVA, 2Nos 160MVA, 3Nos 80MVA Power Transformers and 1No. 125MVAR Bus Reactor. This Substation mainly for caters the loads of ever growing IT corridor in and around Gachibowli, Madhapur and Jubilee Hills.
- The Rayadurg Substation is in the vicinity of High rise infrastructure of the Hitech City. The downstream 220kV/ 132kV/ 33kV connectivity of Rayadurg Substation is totally connecting with the key 220kV and 132kV substations.

- The incoming line is from 400kV Kethireddypally SS of length 42km. This Hybrid 400kV line comprises of HTLS Conductor on Conventional Towers (for 27.25km) and Monopoles (for 11.37km) and 3.05 km of 400kV XLPE UG Cable. The four voltage levels GIS Substation and hybrid line is first of its kind in Country.
- 400kV Monopoles are being used for the first time in the HMDA and ORR areas where the availability of corridor is limited as base width of is around 2.5 to 3 meters Monopoles require very less space compared to the Conventional Towers of width is around 12 to 25 meters.
- Salient features of 400/220/132/33kV Rayadurg Substation and connected network :
  - Utilization of HTLS INVAR conductor for Overhead Line for enhanced power transmission
  - Utilization of Mutli circuit Monopoles due to congested corridor
  - Special emphasis on firefighting system in substation which includes
  - Nitrogen Injection Fire Protection System(NIFPS) & Emulsifier system for Transformers and Reactors
  - Vertical pumps for High pressure water to quench the Fire during accidents
  - Erection of Firewalls around Transformers and Reactors
  - Aesthetically designed substation premises to match with the surroundings areas
  - Erection of 33kV E-house to accommodate the 33kV Features.
- With the above provisions, the Sub-station can cater load upto 2000MW in and around Hyderabad.

# PROFESSOR JAYASHANKAR TELANGANA STATE AGRICULTURAL UNIVERSITY

Administrative Office, Rajendranagar, Hyderabad- 500 030, Telangana State, India

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DIRECTOR OF RESEARCH



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Lr.No:10337 /Res.II//2021, Dated:04-01-2022

To  
The Chief Engineer / 400 kV  
TSTRANSCO, Vidyut Soudha,  
Hyderabad 500 082  
Sir,

Sub: PJTSAU – TSTRANSCO – Preparation of wildlife mitigation plan for the diversion of 6.7076 ha of Mrugavani reserve forest in Shamshabad Forest Division in Rangareddy District – Forwarding of status report with mitigation plan – Reg.

Ref: Lr.No.EE/400KV/Const-II/Metro/Hyderabad/F.R'durg  
line/D.No.1019/21, dated:20.12.2021 of the Executive Engineer, 400  
KV/Const-I, Metro, Erragadda, Hyderabad.

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With reference to the letter cited, I am herewith forwarding a consolidated report of wildlife mitigation plan for the diversion of 6.7076 ha of Mrugavani reserve forest in Shamshabad Forest Division in Rangareddy District for erection of 400 KV overhead line being conducted (as per the objectives mentioned) by the Principal Scientist & Head, AINP on Vertebrate Pest Management, Rajendranagar, PJTSAU.

Yours Sincerely,

*[Signature]*  
4/1/22

Encl: as above

Director of Research

cc to: the Executive Engineer/400KV/Const-II, Metro, Erragadda, Hyderabad.

cc to: Principal Scientist & Head, AINP on VPM, Rajendranagar

cc to: SF/SC

//f.b.o//

Lr.No. 010. EE/400kv/Const-II/Metro/Hyd/D.No: 1091 / Dtd: 01/01/22  
copy forwarded to AEF/400KV/SD-3/Const-II/Metro/Hyd.  
to take necessary action.

*[Signature]*  
Superintendent  
5/1/2022

Executive Engineer  
400 KV Metro, Hyderabad  
TSTRANSCO, Hyd.

**WILDLIFE MITIGATION PLAN FOR THE DIVERSION OF 6.7076 HA  
OF MRUGAVANI RESERVE FOREST IN SHAMSHABAD  
FOREST DIVISION IN RANGAREDDY DISTRICT**



**Prepared by**

***Dr V. Vasudeva Rao***  
***Principal Scientist & Head***

**All India Network Project on Vertebrate Pest Management**  
**PJTS Agricultural University**  
**Rajendranagar, Hyderabad - 500 030, Telangana State**

## **WILDLIFE MITIGATION PLAN FOR THE DIVERSION OF 6.7076 HA OF MRUGAVANI RESERVE FOREST IN SHAMSHABAD FOREST DIVISION IN RANGAREDDY DISTRICT**

### **I. INTRODUCTION**

The value of assessing flora and fauna has been recognised as an important component of biodiversity conservation. Since time immemorial, natural, namely plants animals and microorganisms, have coexisted in ecosystems across the landscapes, constituting biomes. There exist numerous examples in Indian epics and religious scriptures emphasising the importance of preserving flora and fauna, for their aesthetic appeal, mutual interdependence and the benefit they offer to human societies. The nature of wild plant and animal communities serve as excellent ecological and environmental indicators. They respond not only to a single environmental factor, but also to a group of interacting factors. The plant and animal communities integrate these influences and respond sensitively to changes in the environment to abiotic stress and biotic factors, including the anthropogenic activities. An attempt has been made in this context to comprehend the distribution pattern of flora and fauna in forest habitat (6.7076 ha of Mrugavani National Park, a reserve forest) diverted for 400 KV overhead line to suggest effective mitigation measures for sustainability of the existing wildlife.

### **II. STUDY AREA**

The study area is part (6.7076 ha) of a reserve forest diverted for the erection of 400 KV overhead line passing through Mrugavani Reserve Forest parallel to the service road of ORR for a length of 1.458 km, from TSPA Junction to ORR Junction, It is to be a corridor with of 46 meters width. It requires 6.7076 ha land diversion primarily for extending a high power electric line.

The general topography is mostly flat with plantation and natural forest. The land elevation ranges between 538 to 553 m AMSL. The climate is generally dry; the average rainfall is about 562 mm. The plant cover is of tropical dry deciduous forest but a degraded one. The open areas are occupied by herbs and grasses. This area is dominated by native tree species such as *Albizia amara*, *Acacia leucophloea*, planted *Dalbergia sissoo* and *Pongamia pinnata*, and invasive *Azadirachta indica*.

### III. METHODOLOGY

A phyto-sociological aspect of the study was carried out by line transect method. Sample transects were selected and laid in such a way to obtain maximum representation of diverse types of vegetation as well as one km buffer area of 34 ha. The plants were identified using floras by Gamble and Fischer (1915–1936) and Pullaiah (2015), and the accepted names are after [www.worldonlineflora.org](http://www.worldonlineflora.org).

For mammals, intensive surveys were conducted by using transect method (on foot) in all the possible major habitats and recorded the species through direct and indirect evidences. The animal species were identified using the works of Prater (1997) and Pradhan (2004). Reptiles like Snakes, lizards, Monitor lizards, Chameleons and Garden lizards were identified by direct or indirect evidences and capturing their pictures with the help of Smith (1961), Tikader and Sharma (1992), Sharma (1998) and Sharma (1998), Whitaker and Captain (2004). Amphibians were surveyed both in aquatic and terrestrial systems during day and night, searching under the logs and stones, short bushes and tree hollows and under fallen barks and puddles. The species were identified using the keys and descriptions of Chanda (2002), Ravichandran (2004) and Daniel (2005).

The birds were sampled in two ways: (i) Line transect and (ii) point counts, as follows:

**(i) Line transect:** In this method, a straight line of 1km or less as per the habitat was laid in which all birds encountered or sounds heard in 25 m on either side of the transect were recorded; and **(ii) Point counts:** In this method, birds seen at one point or sounds heard in five minutes time in 50 m radius were recorded. After a gap of 10 minutes, the observations were recorded as number of species number. The observation was repeated with every point to record all bird species. Photographs were taken for evidences. The species were identified using “A Pictorial Field Guide to Birds of the Indian Sub-Continent” by Grewal *et al.* (2016), “Birds of Indian sub-continent” by Grimmet *et al.* (1998), and Salim-Ali (2002).



Fig.1. The study area showing towers location.

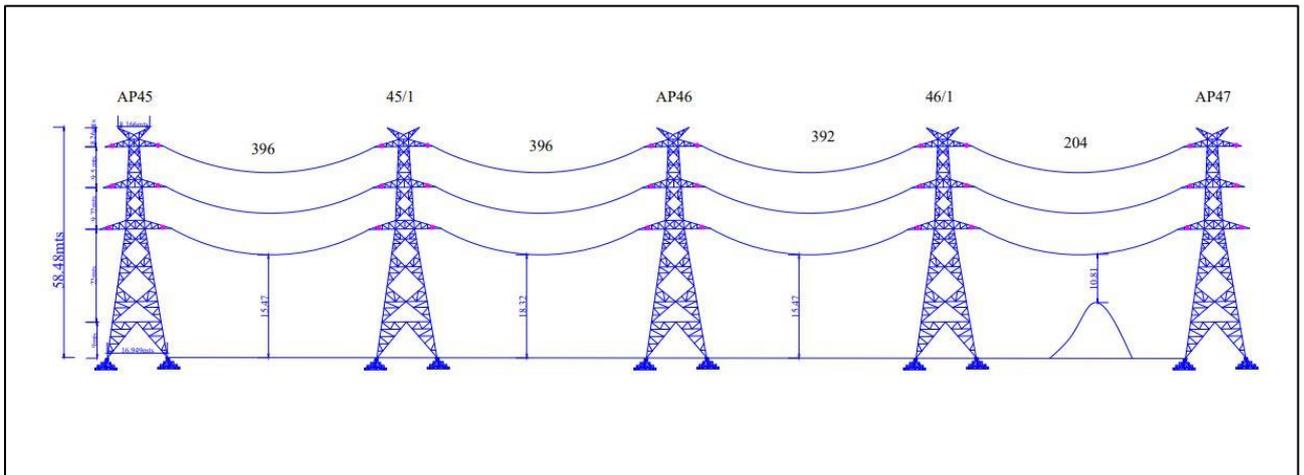


Fig. 2. Diagram of towers showing the measurements.

## IV. RESULTS

### A) Plant Diversity

#### 1. Floristic Composition

The floristic composition, which is one of the major characteristic features of plant communities, varies depending upon site and its environment. The intensive survey of along the High Voltage Electrical line revealed the following floristic diversity:

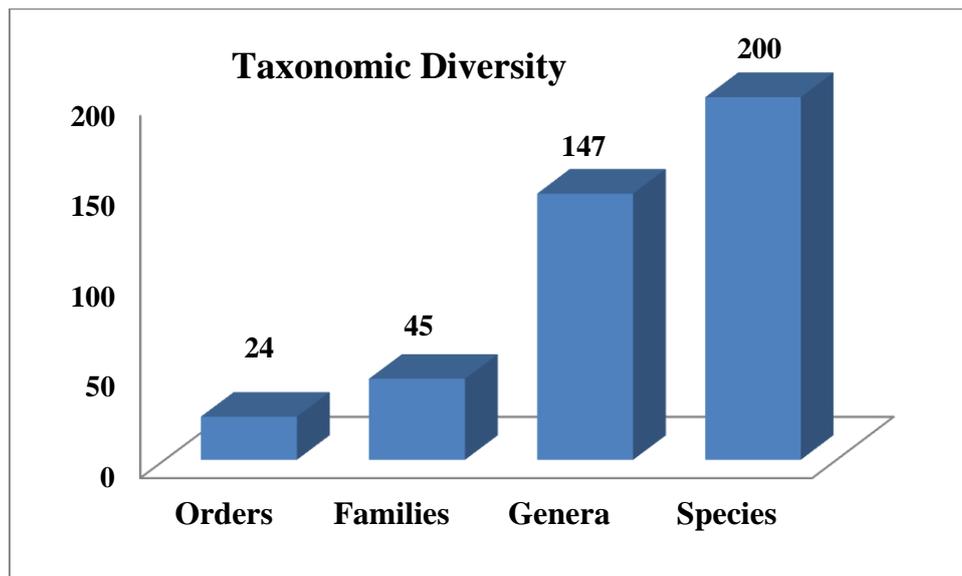
The flora consisted of 200 species, 147 genera, 45 families representing 24 orders. Among the growth forms, herbs dominated with 91 species (45.5%), followed by trees 36

species (18%), grasses 29 species (14.5%), climbers 25 species (12.5%), and shrubs 19 species (9.5%) (Annexure–I). The predominant families are Fabaceae (43 spp.) followed by Poaceae (29 spp.), Malvaceae (15 spp.), Acanthaceae (10 spp.), Convolvulaceae (9 spp.), Amaranthaceae and Asteraceae (7 spp. each), Apocynaceae and Rubiaceae (6 spp. each), Commelinaceae and Euphorbiaceae (5 spp. each), and Capparaceae and Euphorbiaceae (4 spp.). There are six families (Asparagaceae, Bignoniaceae, Lamiaceae, Moraceae, Phyllanthaceae and Rhamnaceae) with three three species each, six families (Anacardiaceae, Cornaceae, Menispermaceae, Molluginaceae, Myrtaceae and Orobanchaceae) with two species each, and 20 families (Annonaceae, Celastraceae, Colchicaceae, Combretaceae, Ebenaceae, Hypoxidaceae, Lauraceae, Loranthaceae, Marsileaceae, Meliaceae, Oleaceae, Onagraceae, Polygalaceae, Pontederiaceae, Salicaceae, Sapindaceae, Ulmaceae, Verbinaceae, Violaceae and Vitaceae) with a single species.

## 2. Taxonomic Diversity

**Table1.** Overall Taxonomic richness of Angiosperm Plants in the Study area.

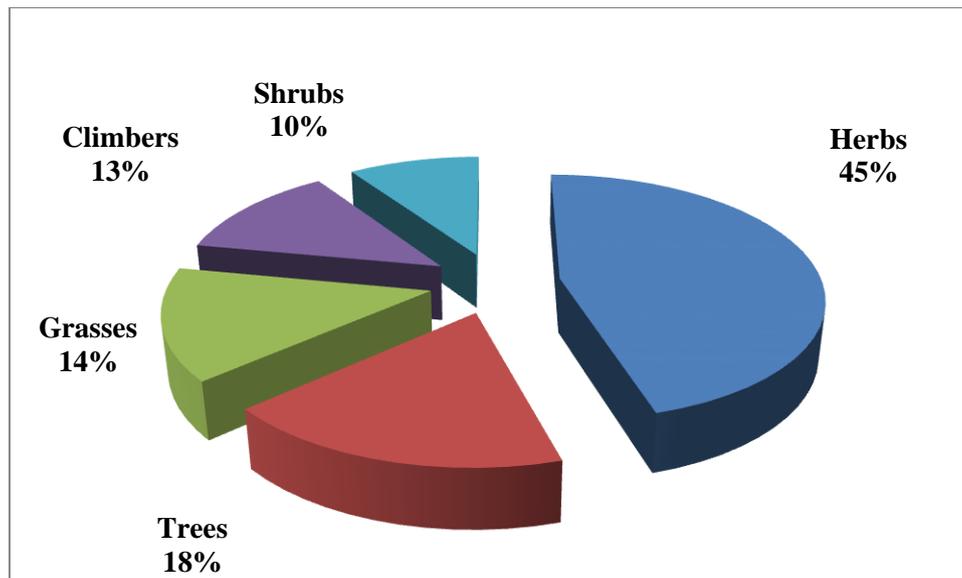
S.No.	Taxonomic Diversity	Numbers
1	Orders	24
2	Families	45
3	Genera	147
4	Species	200



**Fig. 3.** Taxonomic richness of Angiosperm taxa in the Study area.

**Table 2.** Growth forms in the Study area.

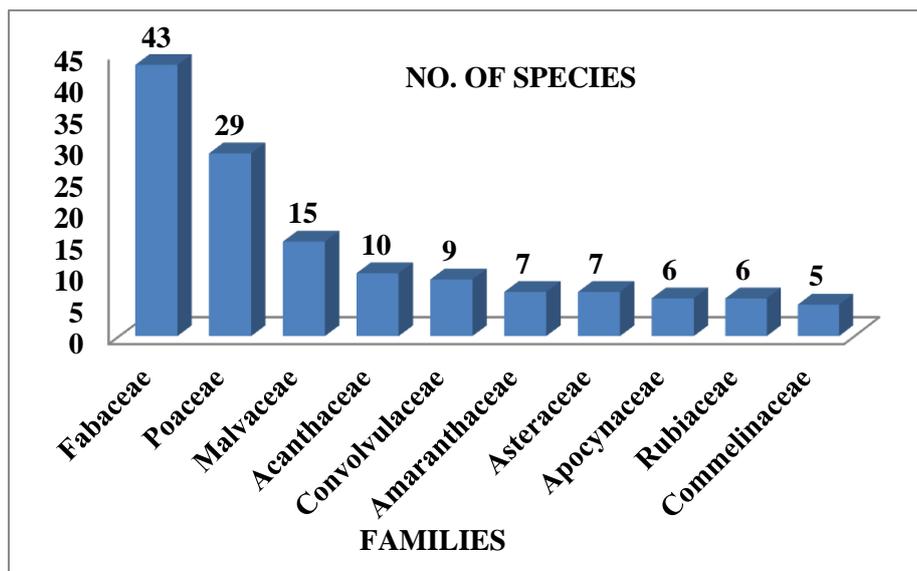
S.No.	Habit	No. of Species	Percentage
1	Herbs	91	45.50
2	Trees	36	18.00
3	Grasses	29	14.50
4	Climbers	25	12.50
5	Shrubs	19	9.50
	<b>Total</b>	<b>200</b>	<b>100.00</b>

**Fig. 4.** Species richness of floral components as percentages growth form at TS Transco.

The dominated species observed in the study area, as per the growth habit are: (i) Herbs: *Hyptis suaveolens*, *Triumfetta rhomboidea*; (ii) Shrubs: *Lantana camara*; (iii) Climbers: *Dregea volubilis* (Bandi gurija), *Pergularia daemia* (Dusara teega), *Rivea hypocrateriformis* (Boddi), *Cassytha filiformis* (Paachi teega), (iv) Trees: *Azadirachta indica* (Vepa), *Dalbergia lanceolaria* subsp. *paniculata*, *Cassia fistula* (Rela); Grasses: *Heteropogon contortus* (Eda gaddi) and *Chrysopogon fulvus*.

**Table 3.** Family-wise species recorded in the Study area.

S.No.	Family	No. of Species
1	Fabaceae	43
2	Poaceae	29
3	Malvaceae	15
4	Acanthaceae	10
5	Convolvulaceae	9
6	Amaranthaceae	7
7	Asteraceae	7
8	Apocynaceae	6
9	Rubiaceae	6
10	Commelinaceae	5
11	Cyperaceae	5
12	Capparaceae	4
13	Euphorbiaceae	4
14	Asparagaceae	3
15	Bignoniaceae	3
16	Lamiaceae	3
17	Moraceae	3
18	Phyllanthaceae	3
19	Rhamnaceae	3
20	Anacardiaceae	2
21	Cornaceae	2
22	Menispermaceae	2
23	Molluginaceae	2
24	Myrtaceae	2
25	Orobanchaceae	2
26	Annonaceae	1
27	Celastraceae	1
28	Colchicaceae	1
29	Combretaceae	1
30	Ebenaceae	1
31	Hypoxidaceae	1
32	Lauraceae	1
33	Loranthaceae	1
34	Marsileaceae	1
35	Meliaceae	1
36	Oleaceae	1
37	Onagraceae	1
38	Polygalaceae	1
39	Pontederiaceae	1
40	Salicaceae	1
41	Sapindaceae	1
42	Ulmaceae	1
43	Verbinaceae	1
44	Violaceae	1
45	Vitaceae	1

**Fig. 5.** Top ten species-rich families at TS Transco.

### 3. IMPORTANTANCE VALUE INDEX (IVI)

#### 4.3.1 Trees

Out of 20 tree species recorded in the sampling plots in the study area, top 10 IVI species are *Azadirachta indica* (IVI: 53.77), *Pongamia pinnata* (IVI: 25.37), *Albizia amara* (IVI: 21.64), *Acacia leucophloea* (IVI: 20.55), *Dalbergia sissoo* (IVI: 20.33), *Flacourtia indica* and *Senna siamea* (IVI: 18.52), *Cassia fistula* and *Dalbergia lanceolaria* subsp. *paniculata* (IVI: 13.78) and *Diospyros chloroxylon* (IVI: 11.54) whereas the least IVI are *Bauhinia racemosa*, *Dalbergia latifolia* and *Peltophorum pterocarpum* (IVI: 4.17) which are all native forest species (Table 4).

Table 4. Relative frequency, Relative abundance, Relative density and IVI of trees in the study area.

S.No.	Scientific name	R.F.	R.A.	R.D.	IVI
1	<i>Azadirachta indica</i> A.Juss.	21.30	2.95	29.52	53.77
2	<i>Pongamia pinnata</i> (L.) Pierre	10.19	3.59	11.60	25.37
3	<i>Albizia amara</i> (Roxb.) B.Boivin	9.26	5.53	6.85	21.64
4	<i>Acacia leucophloea</i> (Roxb.) Willd.	8.33	4.31	7.91	20.55
5	<i>Dalbergia sissoo</i> DC.	8.33	4.62	7.38	20.33
6	<i>Flacourtia indica</i> (Burm.f.) Merr.	7.41	4.79	6.33	18.52
7	<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby	7.41	4.79	6.33	18.52
8	<i>Cassia fistula</i> L.	4.63	5.99	3.16	13.78
9	<i>Dalbergia lanceolaria</i> subsp. <i>paniculata</i> (Roxb.) Thoth.	4.63	5.99	3.16	13.78
10	<i>Diospyros chloroxylon</i> Roxb.	2.78	7.18	1.58	11.54
11	<i>Ixora pavetta</i> Andr.	3.70	3.59	4.22	11.51
12	<i>Grewia damine</i> Gaertn.	2.78	5.39	2.11	10.27
13	<i>Dalbergia latifolia</i> Roxb.	1.85	7.18	1.05	10.09
14	<i>Ehretia pubescens</i> Benth.	0.93	7.18	0.53	8.64
15	<i>Parkia biglandulosa</i> Wight & Arn.	0.93	7.18	0.53	8.64
16	<i>Rhus mysorensis</i> G.Don	0.93	7.18	0.53	8.64
17	<i>Lannea coromandelica</i> (Houtt.) Merr.	1.85	1.80	4.22	7.87
18	<i>Bauhinia racemosa</i> Lam.	0.93	3.59	1.05	5.57
19	<i>Dalbergia latifolia</i> Roxb.	0.93	3.59	1.05	5.57
20	<i>Peltophorum pterocarpum</i> (DC.) K.Heyne	0.93	3.59	1.05	5.57
	<b>Grand Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>300.00</b>

### 4.3.2 Shrubs

Out of 20 shrub species recorded in the sampling plots in the study area, the top 10 high IVI species are *Lantana camara* (IVI: 65.61), *Canthium coromandelicum* (IVI: 27.32), *Catunaregam spinosa* (IVI: 22.68), *Grewia hirsuta* (IVI: 21.30), *Carissa spinarum* (IVI: 16.42), *Senna auriculata* (IVI: 15.42), *Gymnosporia emarginata* (IVI: 15.13), *Dodonaea viscosa* (IVI: 14.94) and stem parasitic *Dendrophthoe falcata* (IVI: 11.55) and *Rhus mysorensis* (IVI: 10.87). On the other, the planted *Agave americana* (IVI: 4.17) showing the least IVI (Table 5).

Table 5. Relative frequency, Relative abundance, Relative density and IVI of shrubs in the study area.

S.No.	Scientific Name	R.F	R.A	R.D	IVI
1	<i>Lantana camara</i> L.	23.64	1.69	40.29	65.61
2	<i>Canthium coromandelicum</i> (Burm.f.) Alston	11.82	2.65	12.86	27.32
3	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	10.00	2.96	9.71	22.68
4	<i>Grewia hirsuta</i> Vahl	10.00	3.87	7.43	21.30
5	<i>Carissa spinarum</i> L.	7.27	4.58	4.57	16.42
6	<i>Senna auriculata</i> (L.) Roxb.	6.36	3.05	6.00	15.42
7	<i>Gymnosporia emarginata</i> (Willd.) Thwaites	6.36	5.34	3.43	15.13
8	<i>Dodonaea viscosa</i> (L.) Jacq.	6.36	4.01	4.57	14.94
9	<i>Dendrophthoe falcata</i> (L.f.) Ettingsh.	1.82	9.16	0.57	11.55
10	<i>Rhus mysorensis</i> G.Don	3.64	5.23	2.00	10.87
11	<i>Grewia flavescens</i> Juss.	3.64	4.58	2.29	10.50
12	<i>Capparis divaricata</i> Lam.	0.91	9.16	0.29	10.35
13	<i>Clerodendrum phlomidis</i> L.f.	0.91	9.16	0.29	10.35
14	<i>Ixora pavetta</i> Andr.	0.91	9.16	0.29	10.35
15	<i>Ziziphus jujuba</i> Mill.	0.91	9.16	0.29	10.35
16	<i>Dichrostachys cinerea</i> Wight & Arn.	1.82	6.11	0.86	8.78
17	<i>Carissa carandas</i> L.	0.91	3.05	0.86	4.82
18	<i>Grewia villosa</i> Willd.	0.91	3.05	0.86	4.82
19	<i>Grewia tilifolia</i> Vahl	0.91	2.29	1.14	4.34
20	<i>Agave americana</i> L.	0.91	1.83	1.43	4.17
	<b>Grand Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>300.00</b>

### 4.3.3 Climbers

Among the 13 climbers recorded in the sampling plots of the study area, the top 10 high IVI species in decreasing order are *Cajanus scarabaeoides* (IVI: 59.74), *Jasminum auriculatum* (IVI: 43.01), *Hemidesmus indicus* (IVI: 32.80), *Cocculus hirsutus* (IVI: 27.19),

*Cassytha filiformis* (IVI: 21.86), *Gymnema sylvestre* (IVI: 19.98), *Merremia tridentata* (IVI: 19.53), *Capparis zeylanica* (IVI: 16.19), *Asparagus racemosus* and *Capparis sepiaria* (IVI: 14.18) whereas and, on the other hand, *Jacquemontia paniculata* (IVI: 8.73) showed the least IVI (Table 6).

Table 6. Relative frequency, Relative abundance, Relative density and IVI of climbers in the study area.

S.No.	Scientific Name	R.F.	R.A.	R.D.	IVI
1	<i>Cajanus scarabaeoides</i> (L.) Thouars	21.92	3.61	34.21	59.74
2	<i>Jasminum auriculatum</i> Vahl	19.18	6.09	17.74	43.01
3	<i>Hemidesmus indicus</i> (L.) R. Br. ex Schult.	13.70	5.80	13.30	32.80
4	<i>Cocculus hirsutus</i> (L.) W.Theob.	10.96	6.09	10.14	27.19
5	<i>Cassytha filiformis</i> L. (stem parasite)	8.22	7.31	6.34	21.86
6	<i>Gymnema sylvestre</i> (Retz.) R.Br. ex Sm.	6.85	8.70	4.43	19.98
7	<i>Merremia tridentata</i> (L.) Hallier f.	6.85	7.61	5.07	19.53
8	<i>Capparis zeylanica</i> L.	2.74	12.18	1.27	16.19
9	<i>Asparagus racemosus</i> Willd.	1.37	12.18	0.63	14.18
10	<i>Capparis sepiaria</i> L.	1.37	12.18	0.63	14.18
11	<i>Ipomoea pes-tigridis</i> L.	2.74	6.09	2.53	11.36
12	<i>Ziziphus oenopolia</i> (L.) Mill.	2.74	6.09	2.53	11.36
13	<i>Jacquemontia paniculata</i> (Burm. f.) Hallier f.	1.37	6.09	1.27	8.73
	<b>Grand Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>300.00</b>

#### 4.3.4 Herbs

Amongst the 91 herbs recorded in the sampling plots of the study area, the top 10 high IVI species are the invasive exotic *Hyptis suaveolens* (IVI: 14.76) followed by *Setaria pumila* (IVI: 16.52), *Spermacoce articularis* (IVI: 13.26), *Blepharis maderaspatensis* (IVI: 9.55), *Waltheria indica* (IVI: 9.11), *Chrysopogon fulvus* (IVI: 8.87), *Evolvulus alsinoides* (IVI: 8.42), *Heteropogon contortus* (IVI: 8.06), *Triumfetta rhomboidea* (IVI: 6.88) and *Lepidagathis cristata* (IVI: 6.74) whereas the one with the least IVI is *Justicia procumbens* (IVI: 1.11) (Table 7).

Table 7. Relative frequency, Relative abundance, Relative density and IVI of herbs in study area.

S.No.	Scientific Name	R.F.	R.A.	R.D.	IVI
1	<i>Hyptis suaveolens</i> (L.) Poit.	6.60	0.32	13.50	20.42
2	<i>Setaria pumila</i> (Poir.) Roem. & Schult.	5.28	0.32	10.93	16.52
3	<i>Spermacoce articularis</i> L.f.	5.54	0.50	7.21	13.26
4	<i>Blepharis maderaspatensis</i> (L.) B.Heyne ex Roth	4.22	0.58	4.75	9.55
5	<i>Waltheria indica</i> L.	4.22	0.65	4.23	9.11
6	<i>Chrysopogon fulvus</i> (Spreng.) Chiov.	4.22	0.70	3.95	8.87
7	<i>Evolvulus alsinoides</i> (L.) L.	3.96	0.69	3.78	8.42
8	<i>Heteropogon contortus</i> (L.) P.Beauv. ex Roem. & Schult.	3.96	0.78	3.32	8.06
9	<i>Triumfetta rhomboidea</i> Jacq.	3.17	0.68	3.03	6.88
10	<i>Lepidagathis cristata</i> Willd.	3.43	0.96	2.35	6.74
11	<i>Eragrostiella bifaria</i> (Vahl) Bor	2.90	0.60	3.15	6.66
12	<i>Phyllanthus virgatus</i> G.Forst.	2.90	1.04	1.83	5.77
13	<i>Tephrosia purpurea</i> (L.) Pers.	2.64	0.98	1.77	5.39
14	<i>Aristida setacea</i> Retz.	2.11	0.64	2.17	4.92
15	<i>Brachiaria ramosa</i> (L.) Stapf	1.85	0.54	2.23	4.62
16	<i>Pavonia zeylanica</i> (L.) Cav.	2.11	1.05	1.32	4.48
17	<i>Andrographis paniculata</i> (Burm.f.) Nees	1.85	0.81	1.49	4.15
18	<i>Chamaecrista absus</i> (L.) H.S.Irwin & Barneby	0.79	3.02	0.17	3.99
19	<i>Aristida hystrix</i> L.f.	0.26	3.02	0.06	3.35
20	<i>Blainvillea acmella</i> (L.) Philipson	0.26	3.02	0.06	3.35
21	<i>Crotalaria filipes</i> Benth.	0.26	3.02	0.06	3.35
22	<i>Portulaca pilosa</i> L.	0.26	3.02	0.06	3.35
23	<i>Hibiscus micranthus</i> L.f.	0.79	2.27	0.23	3.29
24	<i>Sida cordata</i> (Burm.f.) Borss. Waalk.	1.32	0.72	1.20	3.24
25	<i>Sida spinosa</i> L.	1.32	0.80	1.09	3.20
26	<i>Allmania nodiflora</i> (L.) R.Br. ex Wight	1.32	0.84	1.03	3.19
27	<i>Indigofera linnaei</i> Ali	1.06	1.34	0.51	2.92
28	<i>Justicia glauca</i> Rottler	1.06	1.34	0.51	2.92
29	<i>Indigofera linifolia</i> (L.f.) Retz.	0.79	0.28	1.83	2.91
30	<i>Corchorus aestuans</i> L.	0.79	1.81	0.29	2.89
31	<i>Hemidesmus indicus</i> (L.) R. Br. ex Schult.	0.79	1.81	0.29	2.89
32	<i>Alternanthera sessilis</i> (L.) R.Br. ex DC.	1.06	1.01	0.69	2.75
33	<i>Chamaecrista pumila</i> (Lam.) K.Larsen	1.06	1.01	0.69	2.75
34	<i>Oldenlandia umbellata</i> L.	1.06	0.71	0.97	2.74
35	<i>Blepharis integrifolia</i> (L.f.) E.Mey. & Drege ex Schinz	1.06	0.76	0.92	2.73
36	<i>Zornia gibbosa</i> Span.	1.06	0.86	0.80	2.72

37	<i>Dichanthium annulatum</i> (Forssk.) Stapf	0.53	2.02	0.17	2.72
38	<i>Barleria prionitis</i> L.	0.79	1.51	0.34	2.65
39	<i>Tephrosia pumila</i> (Lam.) Pers.	0.79	1.51	0.34	2.65
40	<i>Alternanthera tenella</i> Colla	0.79	1.01	0.51	2.32
41	<i>Tephrosia strigosa</i> (Dalzell) Santapau & Maheshw.	0.79	1.01	0.51	2.32
42	<i>Dactyloctenium aegyptium</i> (L.) Willd.	0.79	0.91	0.57	2.27
43	<i>Acalypha alnifolia</i> Klein ex Willd.	0.53	1.51	0.23	2.27
44	<i>Acanthospermum hispidum</i> DC.	0.53	1.51	0.23	2.27
45	<i>Alysicarpus monilifer</i> (L.) DC.	0.53	1.51	0.23	2.27
46	<i>Orthosiphon rubicundus</i> (D.Don) Benth.	0.53	1.51	0.23	2.27
47	<i>Alloteropsis cimicina</i> (L.) Stapf	0.79	0.70	0.74	2.23
48	<i>Hybanthus enneaspermus</i> (L.) F.Muell.	0.79	0.70	0.74	2.23
49	<i>Desmodium triflorum</i> (L.) DC.	0.53	1.21	0.29	2.02
50	<i>Eragrostis viscosa</i> (Retz.) Trin.	0.53	1.21	0.29	2.02
51	<i>Sehima nervosum</i> (Rottler) Stapf	0.53	1.21	0.29	2.02
52	<i>Sida acuta</i> Burm.f.	0.53	1.21	0.29	2.02
53	<i>Spermacoce ocymoides</i> Burm.f.	0.53	1.21	0.29	2.02
54	<i>Aeschynomene americana</i> L.	0.26	1.51	0.11	1.89
55	<i>Alternanthera ficoidea</i> Griseb.	0.26	1.51	0.11	1.89
56	<i>Alysicarpus vaginalis</i> (L.) DC.	0.26	1.51	0.11	1.89
57	<i>Crotalaria hirsuta</i> Shecut	0.26	1.51	0.11	1.89
58	<i>Merremia gangetica</i> Cufod.	0.26	1.51	0.11	1.89
59	<i>Xenostegia tridentata</i> (L.) D.F. Austin & Staples	0.26	1.51	0.11	1.89
60	<i>Polygala arvensis</i> Willd.	0.26	1.51	0.11	1.89
61	<i>Pupalia lappacea</i> (L.) Juss.	0.26	1.51	0.11	1.89
62	<i>Microstachys chamaelea</i> (L.) Muell._Arg.	0.53	1.01	0.34	1.88
63	<i>Stylosanthes hamata</i> (L.) Taub.	0.53	1.01	0.34	1.88
64	<i>Fimbristylis ovata</i> (Burm.f.) J.Kern	0.53	0.36	0.97	1.86
65	<i>Melanocenchris jacquemontii</i> Jaub. & Spach	0.26	0.12	1.43	1.82
66	<i>Cyanthillium cinereum</i> (L.) H.Rob.	0.53	0.86	0.40	1.79
67	<i>Mollugo pentaphylla</i> L.	0.53	0.86	0.40	1.79
68	<i>Dichanthium foveolatum</i> (Delile) Roberty	0.53	0.76	0.46	1.74
69	<i>Acrachne racemosa</i> (B.Heyne ex Roth) Ohwi	0.53	0.55	0.63	1.71
70	<i>Blumea lacera</i> (Burm.f.) DC.	0.26	1.01	0.17	1.44
71	<i>Chlorophytum laxum</i> R.Br.	0.26	1.01	0.17	1.44
72	<i>Commelina benghalensis</i> L.	0.26	1.01	0.17	1.44
73	<i>Crotalaria hebecarpa</i> (DC.) Rudd	0.26	1.01	0.17	1.44
74	<i>Digitaria bicornis</i> (Lam.) Roem. & Schult.	0.26	1.01	0.17	1.44
75	<i>Kyllinga bulbosa</i> P.Beauv.	0.26	1.01	0.17	1.44
76	<i>Phyllanthus tenellus</i> Roxb.	0.26	1.01	0.17	1.44
77	<i>Ruellia patula</i> Jacq.	0.26	1.01	0.17	1.44

78	<i>Chamaecrista absus</i> (L.) H.S.Irwin & Barneby	0.26	1.01	0.17	1.44
79	<i>Spermacoce pusilla</i> Wall.	0.26	1.01	0.17	1.44
80	<i>Striga asiatica</i> (L.) Kuntze (Root parasite)	0.26	1.01	0.17	1.44
81	<i>Tridax procumbens</i> (L.) L.	0.26	1.01	0.17	1.44
82	<i>Xyris indica</i> L.	0.26	1.01	0.17	1.44
83	<i>Cyanotis cristata</i> (L.) D.Don	0.26	0.76	0.23	1.25
84	<i>Cyperus iria</i> L.	0.26	0.76	0.23	1.25
85	<i>Trichuriella monsoniae</i> (L.f.) Bennet	0.26	0.76	0.23	1.25
86	<i>Triumfetta pilosa</i> Roth	0.26	0.76	0.23	1.25
87	<i>Cynodon dactylon</i> (L.) Pers.	0.26	0.23	0.74	1.24
88	<i>Cyanotis tuberosa</i> (Roxb.) Schult. & Schult.f.	0.26	0.60	0.29	1.15
89	<i>Murdannia nudiflora</i> (L.) Brenan	0.26	0.60	0.29	1.15
90	<i>Digitaria longiflora</i> (Retz.) Pers.	0.26	0.30	0.57	1.14
91	<i>Justicia procumbens</i> L.	0.26	0.50	0.34	1.11
<b>Grand Total</b>		<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>300.00</b>

## ENDANGERED FLORA IN THE STUDY AREA

None of the plant species found in the study area was included in the list of the IUCN List of Threatened species or the Redlist of Indian plants by the Botanical survey of India.

## B) Faunal Diversity

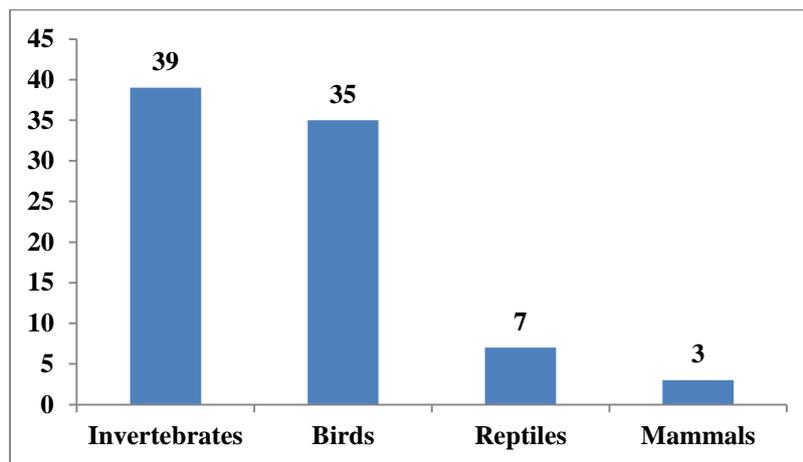
Three species of Mammals belonging to three each of animal orders and families were recorded. They are Three-striped palm squirrel (*Funambulus palmarum*), Black-naped hare (*Lepus nigricollis*) and Wild Boar (*Sus scrofa*). The birds spotted are of 35 species belonging to 25 families and 12 orders. The order Passeriformes represented with highest number (21 spp.) followed by Columbiformes (3 spp.), Galliformes (2 spp.) and the rest with one species each. The common bird species found are Baya weaver (*Ploceus philippinus*), Red-wattled lapwing (*Vanellus indicus*), Green bee-eater (*Merops orientalis*), Grey-breasted Prinia (*Prinia hodgsonii*), Rose-ringed Parakeet (*Psittacula krameri*), Large grey babbler (*Argya malcolmi*) and Red-vented bulbul (*Pycnonotus cafer*). The herpetofauna found constituted seven species from six families and two orders while invertebrates recorded were of 39 species belonging to 27 genera, seven families and two orders. A detailed list of faunal components observed in the study area is provided in Annexure-II.

The herpetofauna (Reptiles and Amphibians) has two major orders, namely Squamata and Anura. The present study finds five species of reptiles belonging to order Squamata and

two amphibians of the order Anura. Two lizards, viz., Common garden lizard (*Calotes versicolor*) and Fan-throated lizard (*Citana ponticeriana*) are common. Similarly, two amphibians found common are the Common tree frog (*Polypedates maculatus*) and Common Indian toad (*Duttaphrynus melanostictus*).

The invertebrates recorded include 39 species seven families and two orders. The most diverse among Invertebrates orders are Lepidoptera (with 26 spp.) which are butterflies and moths. Lemon pansy (*Junonia lemonias*), Common Crow (*Euploea core*) and Small grass yellow (*Eurema brigitta*) are common butterflies in the area. The Odonata dragonflies and damselflies) are represented by five species.

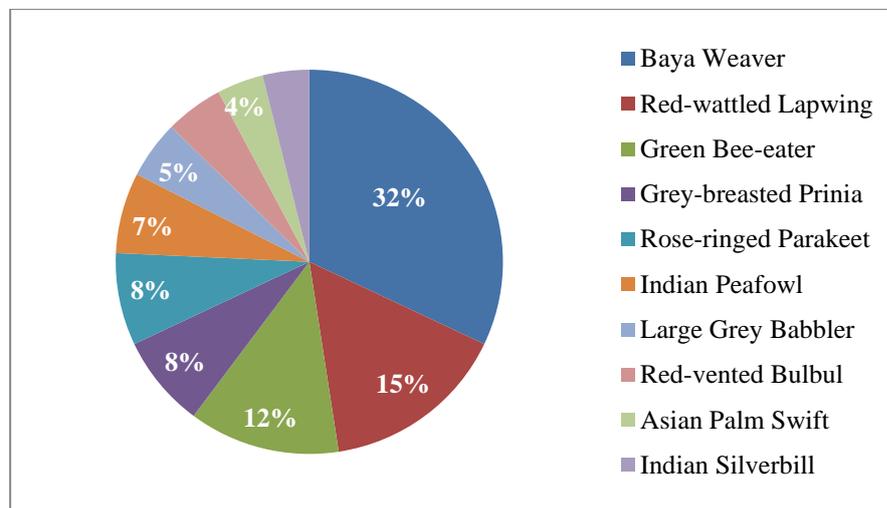
The Species richness was high for invertebrates (39 spp.) followed by birds (35 spp.), herpetofauna (7 spp.) and mammals (3 spp.) (Fig. 5). Furthermore, the percent abundance of Baya weaver was recorded to be high (21%), followed by Red-wattled lapwing (10%), Green bee-eater (8%), Grey-breasted prinia (5%), and Rose-ringed parakeet (5%) (Table 8; Fig. 6).



**Fig. 5.** Species richness of faunal components in the study area.

**Table 8.** Percent abundance of top 10 bird species in the study area.

Name of the bird	Percent abundance
<b>Baya weaver</b>	21
<b>Red-wattled Lapwing</b>	10
<b>Green Bee-eater</b>	8
<b>Grey-breasted Prinia</b>	5
<b>Rose-ringed Parakeet</b>	5
<b>Indian Peafowl</b>	4
<b>Large Grey Babbler</b>	3
<b>Red-vented Bulbul</b>	3
<b>Asian Palm Swift</b>	3
<b>Indian Silverbill</b>	3

**Fig. 6.** Percent abundance of top 10 bird species in the study area.

## ENDANGERED FAUNA

Not any of the animal species found in the study area was happen to be part of IUCN List of Threatened categories. The species like Indian Peafowl (*Pavo cristatus*), Common Monitor lizard (*Varanus bengalensis*) Schedule I and Spectacled cobra (*Naja naja*) Schedule II and Indian wild boar (*Sus scrofa*) Schedule III and the remaining mammals, birds and reptiles are under Schedule-IV of IWPA, except the Rock pigeon (*Columba livia*).

## V. WILDLIFE MITIGATION MEASURES

During the study of the diverted site, no Rare, Endangered and Threatened (RET) species were found. The proposed 400 KV overhead line has, therefore, has no effect on wildlife and surrounding habitat.

The proposed transmission line is passing through the outer part of the reserve forest area, which is barest minimum and unavoidable. It is expected that, no significant irreversible change in local biodiversity will occur due the project. The transmission line will not create any barriers to wildlife or bird movements. The Bio-diversity Impact Assessment study carried out in this area reflects that No Rare, Endangered and Threatened (RET) species of Flora and Fauna found in the area proximate to Transmission Line, while the transmission line alignment does not pass through any key wildlife habitat and is not expected to cause any net loss of species. However, the following measures are suggested to minimize or mitigate any adverse impact on the wildlife of the area in future.

1. To prevent accidental collision of birds with the conductor, bird diverters coloured/contrast marker devices shall be installed all along the transmission lines including on the earth lines and, importantly, they should be visible at night and also to make it visible to birds at a long distance.
2. Bird flight diverters were recommended to install about 300 per km.
3. The fixing design and configuration of these should be followed as per the Government of India guidelines
4. Perch deterrents should be placed on the tower arms to prevent bird from perching on it.
5. During the construction phase, the excavated pits shall be properly barricaded and fenced so as to prevent accidental falling of mammals in the vicinity of the construction sites.
6. Erection of fence/wall next to towers to reduce movement of reptiles and amphibians from the forest habitat into the open area/corridor, which will also minimize bird attraction to the area.
7. There is a need to erect caution sign boards along the proposed power line corridor.
8. Regular monitoring of area for biodiversity in consultation with local forest officials.
9. Invasive species like *Hyptis suaveolens*, *Lantana camera*, *Setaria pumila*, *Prosopis juliflora*, etc. should be removed to prevent them from invading existing wild habitat and surrounding environs.

10. To minimize the bird attraction to the sites, the user agency has to monitor on regular basis to clear the carcasses and garbage dumps around 1 km radius.
11. The user agency should undertake the plantation work with native species (Annexure-III)
12. The user agency should undertake the plantation of perennial medicinal plants (Annexure-IV)
13. Grazing by cattle, goat and sheep should be stopped with the help of forest department.
14. The existing 6.7076 ha land should not be used for any other purpose than the intended purpose.
15. A monitoring programme should be developed to check the efficiency of mitigation measures in the transmissionline area and make them further effective over time.
16. Annual compliance report should be submitted to Chief Wild Life Warden. The annual compliance certificate on the stipulated conditions should be submitted by the project proponent to the DFO, Rangareddy, and
17. The user agency shall comply with provisions of wildlife (Protection Act) 1972 in the situation of wildlife conflict.

## ANNEXURE – I. Check list of flora (plants) in the study area.

## Trees

S.No.	Scientific Name	Comon name	Family
1	<i>Lannea coromandelica</i> (Houtt.) Merr.	Gumpena	Anacardiaceae
2	<i>Annona squamosa</i> L.	Seetaphalam	Annonaceae
3	<i>Wrightia tinctoria</i> R.Br.	Kolamuki	Apocynaceae
4	<i>Dolichandrone falcata</i> (Wall. ex DC.) Seem.	Oddi	Bignoniaceae
5	<i>Millingtonia hortensis</i> L.f.	Aakashamalle	Bignoniaceae
6	<i>Tabebuia aurea</i> (Silva Manso) Benth.& Hook.f. ex S.Moore	Yellow Tabebuia	Bignoniaceae
7	<i>Alangium salviifolium</i> (L.f.) Wangerin	Uduga	Cornaceae
8	<i>Diospyros chloroxylon</i> Roxb.	Ullinda	Ebenaceae
9	<i>Acacia auriculiformis</i> Benth.	Australian Acacia	Fabaceae
10	<i>Acacia chundra</i> (Rottler) Willd.	Sandra	Fabaceae
11	<i>Acacia leucophloea</i> (Roxb.) Willd.	Tella thumma	Fabaceae
12	<i>Albizia amara</i> (Roxb.) B.Boivin	Narlinga	Fabaceae
13	<i>Bauhinia racemosa</i> Lam.	Aare	Fabaceae
14	<i>Butea monosperma</i> (Lam.) Kuntze	Moduga	Fabaceae
15	<i>Cassia fistula</i> L.	Rela	Fabaceae
16	<i>Dalbergia lanceolaria</i> subsp. <i>paniculata</i> (Roxb.) Thoth.	Pachari	Fabaceae
17	<i>Dalbergia latifolia</i> Roxb.	Jittegi	Fabaceae
18	<i>Dalbergia sissoo</i> DC.	Sissoo	Fabaceae
19	<i>Delonix regia</i> (Hook.) Raf.	Thurai	Fabaceae
20	<i>Gliricidia sepium</i> (Jacq.) Walp.	Madri	Fabaceae
21	<i>Leucaena leucocephala</i> (Lam.) de Wit	Subabul	Fabaceae
22	<i>Peltophorum pterocarpum</i> (DC.) K.Heyne	Kondachintha	Fabaceae
23	<i>Pongamia pinnata</i> (L.) Pierre	Kanuga	Fabaceae
24	<i>Prosopis juliflora</i> (Sw.) DC.	Sarkar thumma	Fabaceae
25	<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby	Seema tangedu	Fabaceae
26	<i>Grewia damine</i> Gaertn.	Jaana	Malvaceae
27	<i>Azadirachta indica</i> A.Juss.	Vepa	Meliaceae
28	<i>Ficus benghalensis</i> L.	Marri	Moraceae
29	<i>Ficus racemosa</i> L.	Medi	Moraceae
30	<i>Streblus asper</i> Lour.	Barrenka	Moraceae
31	<i>Eucalyptus globulus</i> Labill.	Nilagiri	Myrtaceae
32	<i>Syzygium cumini</i> (L.) Skeels	Neredu	Myrtaceae
33	<i>Ziziphus jujuba</i> Mill.	Regu	Rhamnaceae
34	<i>Ixora pavetta</i> Andr.	Korivi	Rubiaceae
35	<i>Flacourtia indica</i> (Burm.f.) Merr.	Kanaregu	Salicaceae
36	<i>Holoptelea integrifolia</i> Planch.	Nemalinaara	Ulmaceae

## Shrubs

S.No.	Scientific Name	Comon name	Family
1	<i>Rhus mysorensis</i> G.Don	Sitha Sundari	Anacardiaceae
2	<i>Capparis divaricata</i> Lam.	Budareni	Capparaceae
3	<i>Capparis sepiaria</i> L.	Nalluppi	Capparaceae
4	<i>Carissa spinarum</i> L.	Adavi Kalimi	Capparaceae
5	<i>Gymnosporia emarginata</i> (Willd.) Thwaites	Danthi	Celastraceae
6	<i>Jatropha gossypifolia</i> L.var. <i>gossypifolia</i>	Adavi amudhamu	Euphorbiaceae
7	<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	Velthuru	Fabaceae
8	<i>Senna auriculata</i> (L.) Roxb.	Tangedu	Fabaceae
9	<i>Clerodendrum phlomidis</i> L.f.	Tekkali	Lamiaceae
10	<i>Dendrophthoe falcata</i> (L.f.) Ettingsh.	Jiddu, Yelinga	Loranthaceae
11	<i>Abelmoschus moschatus</i> Medik.	Kasturibendau	Malvaceae
12	<i>Grewia hirsuta</i> Vahl	Chitti jana, Jibilika	Malvaceae
13	<i>Grewia tiliifolia</i> Vahl	Cahrachi	Malvaceae
14	<i>Grewia villosa</i> Willd.	Banta, Cemula	Malvaceae
15	<i>Ziziphus xylopyrus</i> (Retz.) Willd.	Gotte	Rhamnaceae
16	<i>Canthium coromandelicum</i> (Burm.f.) Alston	Balusu	Rubiaceae
17	<i>Catunaregam spinosa</i> (Thunb.) Tirveng.	Manga	Rubiaceae
18	<i>Dodonaea viscosa</i> (L.) Jacq.	Bandaru	Sapindaceae
19	<i>Lantana camara</i> L.	Pulikampa, Akshintha puvvulu	Verbinaceae

## Climbers

S.No.	Scientific Name	Comon name	Family
1	<i>Asparagus gonocladus</i> Baker	Pilli theegalu	Asparagaceae
2	<i>Asparagus racemosus</i> Willd.	Pilli theegalu	Asparagaceae
3	<i>Cajanus scarabaeoides</i> (L.) Thouars	Adavi kandi	Fabaceae
4	<i>Capparis zeylanica</i> L.	Aadonda	Capparaceae
5	<i>Cassytha filiformis</i> L.	Paachi teega	Lauraceae
6	<i>Cissus pallida</i> (Wight & Arn.) Steud.	Nalla teega	Vitaceae
7	<i>Cocculus hirsutus</i> (L.) W.Theob.	Dusara teega	Menispermaceae
8	<i>Combretum latifolium</i> Blume	Yada teega	Combretaceae
9	<i>Decalepis hamiltonii</i> Wight & Arn.	Nannari	Apocynaceae
10	<i>Gloriosa superba</i> L.	Naabhi	Colchicaceae
11	<i>Gymnema sylvestre</i> (Retz.) R.Br. ex Sm.	Podapathri	Apocynaceae
12	<i>Hemidesmus indicus</i> (L.) R. Br. ex Schult.	Sugandipaala	Apocynaceae
13	<i>Ipomoea eriocarpa</i> R. Br.		Convolvulaceae

14	<i>Ipomoea marginata</i> (Desr.) Manitz		Convolvulaceae
15	<i>Ipomoea nil</i> (L.) Roth	Katla	Convolvulaceae
16	<i>Ipomoea obscura</i> (L.) Ker Gawl.	Nalla kokkinta	Convolvulaceae
17	<i>Ipomoea pes tigridis</i> L.	Puli adugu	Convolvulaceae
18	<i>Jasminum auriculatum</i> Vahl	Adavi malle	Oleaceae
19	<i>Merremia gangetica</i> Cufod.		Convolvulaceae
20	<i>Xenostegia tridentata</i> (L.) D.F.Austin & Staples		Convolvulaceae
21	<i>Pergularia daemia</i> (Forssk.) Chiov.	Dustaputeega	Apocynaceae
22	<i>Rivea hypocrateriformis</i> Choisy	Boddikura	Convolvulaceae
23	<i>Tinospora sinensis</i> (Lour.) Merr.	Tippateega	Menispermaceae
24	<i>Tylophora indica</i> (Burm. f.) Merr.	Mekameyani aaku	Apocynaceae
25	<i>Ziziphus oenopolia</i> (L.) Mill.	Pariki	Rhamnaceae

## HERBS

S.No.	Scientific Name	Comon name	Family
1	<i>Andrographis echiioides</i> (L.) Nees	Deepalavarusa chettu	Acanthaceae
2	<i>Andrographis paniculata</i> (Burm.f.) Nees	Nelavemu	Acanthaceae
3	<i>Barleria prionitis</i> L.	Mulla gorinta	Acanthaceae
4	<i>Blepharis integrifolia</i> (L.f.) E.Mey. & Drge ex Schinz	Narrow-Leaf Blepharis	Acanthaceae
5	<i>Blepharis maderaspatensis</i> (L.) B.Heyne ex Roth	Anthrinta-pulu	Acanthaceae
6	<i>Hygrophila schulli</i> M.R.Almeida & S.M.Almeida	Neeti gobbi	Acanthaceae
7	<i>Justicia glauca</i> Rottler	Glaucous Justicia	Acanthaceae
8	<i>Justicia simplex</i> D. Don	Simple Justicia	Acanthaceae
9	<i>Lepidagathis cristata</i> Willd.	Nakkapithiri gadda	Acanthaceae
10	<i>Ruellia patula</i> Jacq.	Spreading Ruellia	Acanthaceae
11	<i>Achyranthes aspera</i> L.	Uttareni	Amaranthaceae
12	<i>Allmania nodiflora</i> (L.) R.Br. ex Wight	Gurugu koora	Amaranthaceae
13	<i>Alternanthera ficoidea</i> (L.) Sm.	Sanguinarea	Amaranthaceae
14	<i>Alternanthera sessilis</i> (L.) R.Br. ex DC.	Ponnaganti koora	Amaranthaceae
15	<i>Gomphrena serrata</i> L.	Prostrate Globe Amaranth	Amaranthaceae
16	<i>Pupalia lappacea</i> (L.) Juss.	Erra uthareni	Amaranthaceae
17	<i>Trichuriella monsoniae</i> (L. f.) Bennet	Monson's Knotgrass	Amaranthaceae
18	<i>Chlorophytum laxum</i> R.Br.	Sarala pagada	Asparagaceae
19	<i>Acanthospermum hispidum</i> DC.	Kukka palleru	Asteraceae
20	<i>Ageratum conyzoides</i> (L.) L.	Goat weed	Asteraceae
21	<i>Blainvillea acmella</i> (L.) Philipson	Para Cress Flower	Asteraceae

22	<i>Cyanthillium cinereum</i> (L.) H.Rob.	Sahadevi	Asteraceae
23	<i>Pentanema indicum</i> (L.) Ling	Malathi	Asteraceae
24	<i>Tridax procumbens</i> (L.) L.	Gaddi chamanthi	Asteraceae
25	<i>Waltheria indica</i> L.	Sleepy morning	Asteraceae
26	<i>Commelina benghalensis</i> L.	Venna veduru	Commelinaceae
27	<i>Cyanotis axillaris</i> (L.) D.Don ex Sweet	Golla gundi, Kodi kalu	Commelinaceae
28	<i>Cyanotis cristata</i> (L.) D.Don	Netha kina	Commelinaceae
29	<i>Cyanotis tuberosa</i> (Roxb.) Schult. & Schult.f.	Greater Cat Ears	Commelinaceae
30	<i>Murdannia nudiflora</i> (L.) Brenan	Malabar Dew flower	Commelinaceae
31	<i>Evolvulus alsinoides</i> (L.) L.	Venna veduru	Convolvulaceae
32	<i>Corchorus tridens</i> L.	Horn-Fruited Jute	Cornaceae
33	<i>Cyperus castaneus</i> Willd.	Thunga	Cyperaceae
34	<i>Cyperus rotundus</i> L.	Bhadra tunga musta	Cyperaceae
35	<i>Cyperus rubicundus</i> Vahl	Thunga	Cyperaceae
36	<i>Fimbristylis ovata</i> (Burm.f.) J.Kern	One spike fimbry	Cyperaceae
37	<i>Kyllinga bulbosa</i> P.Beauv.	Thunga	Cyperaceae
38	<i>Acalypha alnifolia</i> Klein ex Willd.	Chinnaaku	Euphorbiaceae
39	<i>Euphorbia hirta</i> L.	Reddivarinanubalu	Euphorbiaceae
40	<i>Microstachys chamaelea</i> (L.) Muell.-Arg.	Sanke's tongue	Euphorbiaceae
41	<i>Aeschynomene mimosoides</i> Nees ex G.Don	Nelaponna	Fabaceae
42	<i>Aeschynomene americana</i> L.	American Joint Vetch	Fabaceae
43	<i>Alysicarpus monilifer</i> (L.) DC.	Necklace-Pod	Fabaceae
44	<i>Alysicarpus vaginalis</i> (L.) DC.	Baramatal-chettu	Fabaceae
45	<i>Chamaecrista absus</i> (L.) H.S.Irwin & Barneby	Chanupala-vittulu	Fabaceae
46	<i>Crotalaria bifaria</i> L.f.	Two-Form Rattlepod	Fabaceae
47	<i>Crotalaria hebecarpa</i> (DC.) Rudd	Fuzzy Fruited Rattlepod	Fabaceae
48	<i>Crotalaria hirsuta</i> Willd.	Hairy Rattlepod	Fabaceae
49	<i>Crotalaria pallida</i> Aiton	Giligitcha	Fabaceae
50	<i>Crotalaria pusilla</i> DC	Small Rattlepod	Fabaceae
51	<i>Desmodium triflorum</i> (L.) DC.	Muntamandu	Fabaceae
52	<i>Indigofera astragalina</i> DC.	Silky Indigo	Fabaceae
53	<i>Indigofera cordifolia</i> Roth	Heart-Leaf Indigo	Fabaceae
54	<i>Indigofera linifolia</i> (L.f.) Retz.	Narrow leaf Indigo	Fabaceae
55	<i>Indigofera linnaei</i> Ali	Cherragaddamu	Fabaceae
56	<i>Senna obtusifolia</i> (L.) H.S.Irwin & Barneby	Tagirise	Fabaceae
57	<i>Senna tora</i> (L.) Roxb.	Stinking Cassia	Fabaceae

58	<i>Stylosanthes hamata</i> (L.) Taub.	Caribbean Stylo	Fabaceae
59	<i>Tephrosia pumila</i> (Lam.) Pers.	Vempali	Fabaceae
60	<i>Tephrosia purpurea</i> (L.) Pers.	Vempali	Fabaceae
61	<i>Tephrosia strigosa</i> (Dalzell) Santapau & Maheshw.	Bristly Tephrosia	Fabaceae
62	<i>Tephrosia villosa</i> (L.) Pers.	Hoary Tephrosia	Fabaceae
63	<i>Zornia gibbosa</i> Span.	Nela bariki	Fabaceae
64	<i>Curculigo orchioides</i> Gaertn.	Nelathadi	Hypoxidaceae
65	<i>Hyptis suaveolens</i> (L.) Poit.	Mabeera	Lamiaceae
66	<i>Orthosiphon rubicundus</i> (D.Don) Benth.	Red Java Tea	Lamiaceae
67	<i>Corchorus aestuans</i> L.	Nela bera	Malvaceae
68	<i>Hibiscus micranthus</i> L.f.	Chetla Potlakaya	Malvaceae
69	<i>Malvastrum coromandelianum</i> (L.) Garcke	Broom weed	Malvaceae
70	<i>Melochia corchorifolia</i> L.	Ganugapindikura	Malvaceae
71	<i>Pavonia zeylanica</i> (L.) Cav.	Karubenda	Malvaceae
72	<i>Sida acuta</i> Burm.f.	Athibala	Malvaceae
73	<i>Sida cordata</i> (Burm.f.) Borss. Waalk.	Gayapaku, Tirunala	Malvaceae
74	<i>Sida cordifolia</i> L.	Heart-Leaf Sida	Malvaceae
75	<i>Sida spinosa</i> L.	Prickly Sida	Malvaceae
76	<i>Triumfetta rhomboidea</i> Jacq.	Banka Tuttura	Malvaceae
77	<i>Marsilea quadrifolia</i> L.	Nachu	Marsileaceae
78	<i>Mollugo nudicaulis</i> Lam.	Naked-Stem Carpetweed	Molluginaceae
79	<i>Mollugo pentaphylla</i> L.	Verri chatarasi	Molluginaceae
80	<i>Ludwigia perennis</i> L.	Lavangakaya	Onagraceae
81	<i>Parasopubia delphinifolia</i> G.Don	Common Sopubia	Orobanchaceae
82	<i>Striga asiatica</i> (L.) Kuntze	Rathi badamika	Orobanchaceae
83	<i>Phyllanthus maderaspatensis</i> L.	Nalla usirika	Phyllanthaceae
84	<i>Phyllanthus tenellus</i> Roxb.	Longstalked Leaf-Flower	Phyllanthaceae
85	<i>Phyllanthus virgatus</i> G.Forst.	Virgate leaf-flower	Phyllanthaceae
86	<i>Polygala arvensis</i> Willd.	Field Milkwort	Polygalaceae
87	<i>Pontederia crassipes</i> Mart.	Gurrapu dekka	Pontederiaceae
88	<i>Oldenlandia umbellata</i> L.	Choy root	Rubiaceae
89	<i>Spermacoce articularis</i> L.f.	Madana	Rubiaceae
90	<i>Spermacoce ocymoides</i> Burm.f.	Purple Leaved Button Weed	Rubiaceae
91	<i>Hybanthus enneaspermus</i> (L.) F.Muell.	Ratnapurusha	Violaceae

## GRASSES AND SEDGES

S.No.	Scientific Name	Comon name	Family
1	<i>Acrachne racemosa</i> (B.Heyne ex Roth) Ohwi	Gaddi	Poaceae
2	<i>Alloteropsis cimicina</i> (L.) Stapf	Bug-seed grass	Poaceae
3	<i>Apluda mutica</i> L.	Adavi korre gaddi	Poaceae
4	<i>Aristida adscensionis</i> L.	Cheepuru gaddi	Poaceae
5	<i>Aristida funiculata</i> Trin. and Rupr.	Cheepuru gaddi	Poaceae
6	<i>Aristida setacea</i> Retz.	Cheepuru gaddi	Poaceae
7	<i>Brachiaria ramosa</i> (L.) Stapf		Poaceae
8	<i>Bulbostylis barbata</i> (Rottb.) C.B.Clarke	Thunga	Poaceae
9	<i>Chloris barbata</i> Sw.	Uppu gaddi	Poaceae
10	<i>Chrysopogon fulvus</i> (Spreng.) Chiov.		Poaceae
11	<i>Cymbopogon martini</i> (Roxb.) W.Watson		Poaceae
12	<i>Cynodon barberi</i> Rang. and Tadul.		Poaceae
13	<i>Cynodon dactylon</i> (L.) Pers.	Gariki gaddi	Poaceae
14	<i>Dactyloctenium aegyptium</i> (L.) Willd.	Crow foot grass	Poaceae
15	<i>Dichanthium annulatum</i> (Forssk.) Stapf	Sheda grass	Poaceae
16	<i>Dichanthium foveolatum</i> (Delile) Roberty		Poaceae
17	<i>Dinebra retroflexa</i> (Vahl) Panz.	Cat tail grass	Poaceae
18	<i>Echinochloa colona</i> (L.) Link	Othagaddi	Poaceae
19	<i>Eragrostiella bifaria</i> (Vahl) Bor	Double-Row Lovegrass	Poaceae
20	<i>Eragrostis viscosa</i> (Retz.) Trin.		Poaceae
21	<i>Heteropogon contortus</i> (L.) P.Beauv. ex Roem. & Schult.	Eda gaddi	Poaceae
22	<i>Melinis repens</i> (Willd.) Zizka	Natal Grass	Poaceae
23	<i>Monochoria vaginalis</i> (Burm.f.) C.Presl	Nirukancha	Poaceae
24	<i>Oropetium thomaeum</i> (L.f.) Trin.	Mount Rockgrass	Poaceae
25	<i>Oryza rufipogon</i> Griff.	Brownbeard Rice	Poaceae
26	<i>Paspalidium flavidum</i> (Retz.) A.Camus	Yellow Watercrown Grass	Poaceae
27	<i>Perotis indica</i> (L.) Kuntze	Nakkathoka gaddi	Poaceae
28	<i>Sehima nervosum</i> (Rottler) Stapf	Rat-Tail Grass	Poaceae
29	<i>Setaria pumila</i> (Poir.) Roem. & Schult.	Nakkakora	Poaceae

## ANNEXURE-II. Check list of Fauna in the Study area.

Mammals						
Sl. No.	Order	Family	Scientific Name	Common Name	Status	IUCN Category
1	Artiodactyla	Suidae	<i>Sus scrofa</i>	Wild boar	Common	LC
2	Lagomorpha	Leporidae	<i>Lepus nigricollis</i>	Black-naped Hare	Common	LC
3	Rodentia	Scuiridae	<i>Funambulus palmarum</i>	Three-striped Palm Squirrel	Very common	LC

Birds						
Sl. No.	Order	Family	Common Name	Scientific Name	IUCN Category	IWPA Schedule
1	Galliformes	Pahasianidae	Grey francolin	<i>Francolinus pondicerianus</i>	LC	Sche-IV
2			Indian peafowl	<i>Pavo cristatus</i>	LC	Sche-I
3	Columbiformes	Columbidae	Laughing dove	<i>Spilopelia senegalensis</i>	LC	Sche-IV
4			Spotted dove	<i>Spilopelia chinensis</i>	LC	Sche-IV
5			Rock Pigeon	<i>Columba livia</i>	LC	Sche-IV
6	Cuculiformes	Cuculidae	Blue-faced malkoha	<i>Phaenicophaeus viridirostris</i>	LC	Sche-IV
7	Caprimulgiformes	Caprimulgidae	Indian nightjar	<i>Caprimulgus asiaticus</i>	LC	Sche-IV
8	Accipitriformes	Accipitridae	Oriental honey buzzard	<i>Pernis ptilorhynchus</i>	LC	Sche-IV
9	Apodiformes	Apodidae	Asian palm swift	<i>Cypsiurus balasiensis</i>	LC	Sche-IV
10	Bucerotiformes	Upupidae	Eurasian hoopoe	<i>Upupa epops</i>	LC	Sche-IV
11	Pelecaniformes	Ardeidae	Cattle egret	<i>Bubulcus ibis</i>	LC	Sche-IV
12	Charadriiformes	Charadriidae	Red-wattled lapwing	<i>Vanellus indicus</i>	LC	Sche-IV
13	Coraciiformes	Meropidae	Green bee-eater	<i>Merops orientalis</i>	LC	Sche-IV
14	Psittaciformes	Psittaculidae	Rose-ringed parakeet	<i>Psittacula krameri</i>	LC	Sche-IV
15	Passeriformes	Aegithinidae	Common iora	<i>Aegithina tiphia</i>	LC	Sche-IV
16		Acrocephalidae	Booted warbler	<i>Iduna caligata</i>	LC	Sche-IV
17		Cisticolidae	Ashy prinia	<i>Prinia socialis</i>	LC	Sche-IV
18			Common tailorbird	<i>Orthotomus sutorius</i>	LC	Sche-IV
19			Plain prinia	<i>Prinia inornata</i>	LC	Sche-IV
20			Grey-breasted prinia	<i>Prinia hodgsonii</i>	LC	Sche-IV
21		Corvidae	House crow	<i>Corvus splendens</i>	LC	Sche-IV
22			Rufous treepie	<i>Dendrocitta vagabunda</i>	LC	Sche-IV
23		Dicruridae	Black drongo	<i>Dicrurus macrocercus</i>	LC	Sche-IV
24		Estrildidae	Indian silverbill	<i>Euodice malabarica</i>	LC	Sche-IV
25			Scaly-breasted munia	<i>Lonchura punctulata</i>	LC	Sche-IV
26			Red avadavat	<i>Amandava amandava</i>	LC	Sche-IV
27		Hirundinidae	Red-rumped swallow	<i>Cecropis daurica</i>	LC	Sche-IV

28		Leiothrichidae	Large-grey babbler	<i>Argya malcolmi</i>	LC	Sche-IV
29		Motacillidae	White-browed wagtail	<i>Motacilla maderaspatensis</i>	LC	Sche-IV
30		Muscicapidae	Indian robin	<i>Copsychus fulicatus</i>	LC	Sche-IV
31		Nectariniidae	Purple sunbird	<i>Cinnyris asiaticus</i>	LC	Sche-IV
32			Purple-rumped sunbird	<i>Leptocoma zeylonica</i>	LC	Sche-IV
33		Ploceidae	Baya weaver	<i>Ploceus philippinus</i>	LC	Sche-IV
34		Pycnonotidae	Red-vented bulbul	<i>Pycnonotus cafer</i>	LC	Sche-IV
35		Sturnidae	Common myna	<i>Acridotheres tristis</i>	LC	Sche-IV

Herpetofauna				
Sl. No.	Family / Scientific Name	Common Name	Abundance	IUCN Status
	<b>Family : Bufonidae</b>			
1	<i>Duttaphrynus melanostictus</i>	Common Indian Toad	Very Common	LC
	<b>Family : Rhacophoridae</b>			
2	<i>Polypedates maculatus</i>	Common Tree Frog	Common	LC
	<b>Family : Agamidae</b>			
3	<i>Calotes versicolor</i>	Indian Garden Lizard	Very Common	-
4	<i>Sitana ponticeriana</i>	Fan-throated lizard	Common	LC
	<b>Family : Varanidae</b>			
5	<i>Varanus bengalensis</i>	Common Indian Monitor	Very Common	LC
	<b>Family : Colubridae</b>			
6	<i>Ptyas mucosa</i>	Indian Rat Snake	Very Common	-
	<b>Family : Elapidae</b>			
7	<i>Naja naja</i>	Spectacled Cobra	Very Common	-

Invertebrates				
Sl. No.	Family	Scientific Name	Common Name	Abundance
1	Lycaenidae	<i>Chilades pandava</i>	Plains cupid	Very Common
2		<i>Zizula hylax</i>	Tiny grass blue	Very Common
3		<i>Castalius rosimon</i>	Common Pierrot	Very Common
4		<i>Tajuria jehana</i>	Plains Blue Royal	Rare
5		<i>Chilades parrhasius</i>	Small Cupid	Rare
6	Nymphalidae	<i>Acraea violae</i>	Tawny coster	Very Common
7		<i>Danaus chrysippus</i>	Plain tiger	Very Common
8		<i>Euploea core core</i>	Common Crow	Common
9		<i>Hypolimnas misippus</i>	Danaid eggfly	Common
10		<i>Junonia lemonias</i>	Lemon pansy	Very Common

11		<i>Junonia orithya</i>	Blue pansy	Very Common
12		<i>Junonia atlites</i>	Grey Pansy	Common
13		<i>Phalanta phalantha</i>	Common Leopard	Very Common
14	Papilionidae	<i>Pachliopta aristolochiae</i>	Common rose	Very Common
15		<i>Papilio demoleus</i>	Lime butterfly	Very Common
16	Pieridae	<i>Catopsilia Pomona</i>	Common emigrant	Common
17		<i>Eurema brigitta</i>	Small grass yellow	Common
18		<i>Eurema hecabe</i>	Common grass yellow	Common
19		<i>Pareronia valeria</i>	Common wanderer	Common
20		<i>Ixias pyrene</i>	Yellow orange-tip	Common
21		<i>Delias eucharis</i>	Indian Jezebel	Common
22		<i>Colotis fausta</i>	Large Salmon Arab	Common
23		<i>Belenois aurota</i>	Pioneer	Common
24		<i>Leptosia nina</i>	Psyche	Rare
25	Hesperiidae	<i>Spialia galba</i>	Indian skipper	Common
26		<i>Borbo cinnara</i>	Rice Swift	Common
34	Gomphidae	<i>Ictinogomphus rapax</i>	Common clutail	Rare
35	Libellulidae	<i>Brachythemis contaminata</i>	Ditch Jewel	Common
37		<i>Crocothemis servilia</i>	Rudy Marsh Skimmer	Common
38		<i>Orthetrum Sabina</i>	Green Marsh Hawk	Common
39		<i>Diplacodes trivialis</i>	Blue ground Skimmer	Very Common

## ANNEXURE- III. List of Native plants for Plantation purpose.

Sl.No	Scientific Name	English Name	Local Name
1	<i>Alangium salviifolium</i>	Sage Leaved Alangium	Uduga
2	<i>Bauhinia variegata</i>	Purple Orchid Tree	Kanchana
3	<i>Bombax ceiba</i>	Red Silk Cotton	Erra burugu
4	<i>Bridelia retusa</i>	Spinous Kino Tree	Kora Maddi, Duda Maddi
5	<i>Buchanania cochinchinensis</i>	Chironji Tree	Morli, Chinna-morri
6	<i>Butea monosperma</i>	Flame of the forest	Moduga
7	<i>Careya arborea</i>	Wild Guava	Budda Darmi
8	<i>Cordia dichotoma</i>	Indian Cherry	Bankiriki, Iriki, Chinna Iriki
9	<i>Drypetes roxburghii</i>	Putranjiva, Lucky Bean Tree	Putranjiva
10	<i>Erythrina suberosa</i>	Corky Coral Tree	Mulla Moduga
11	<i>Erythrina variegata</i>	Coral tree	Badita, Tella Varjam
12	<i>Erythroxylum monogynum</i>	Red Cedar	Devadari
13	<i>Ficus amplissima</i>	Indian fig	Konda juvi
14	<i>Ficus arnottiana</i>	Indian rock fig	Konda raavi
15	<i>Ficus benghalensis</i>	Banyan	Marri
16	<i>Ficus carica</i>	Common fig	Anjir
17	<i>Ficus hispida</i>	Rough leaf fig	Bommamedi
18	<i>Ficus microcarpa</i>	Indian laurel fig	Juvvi
19	<i>Ficus mollis</i>	Soft Fig	Banda juvvi
20	<i>Ficus racemosa</i>	Cluster fig	Medi
21	<i>Ficus religiosa</i>	Peepal	Raavi
22	<i>Ficus semicordata</i>	Drooping Fig	
23	<i>Ficus virens</i>	Current fig tree	Banda juvvi
24	<i>Firmiana colorata</i>	Scarlet Sterculia	
25	<i>Flacourtia indica</i>	Governor's Plum	Kana regu
26	<i>Gmelina arborea</i>	Beechwood, Gamhar	Gummadi taeku
27	<i>Grewia asiatica</i>	Phalsa	
28	<i>Lannea coromandelica</i>	Indian Ash Tree	Gumpena
29	<i>Madhuca indica</i>	Mahua	Ippa
30	<i>Michelia champaca</i>	Champak	Sampanga
31	<i>Mimusops elengi</i>	Spanish cherry	Pagoda
32	<i>Morus alba</i>	Silkworm Mulberry	
33	<i>Phoenix sylvestris</i>	Indian wild date	Eetha
34	<i>Pithecellobium dulce</i>	Manilla Tamarind	Seema chintha
35	<i>Psidium guajava</i>	Guava	Jama
36	<i>Salvadora persica</i>	Toothbrush Tree	
37	<i>Santalum album</i>	Sandalwood	Gandham, Sri gandham
38	<i>Semecarpus anacardium</i>	Marking nut, Dobhi nut	Nalla Jeedi
39	<i>Sesbania grandiflora</i>	Agati	
40	<i>Streblus asper</i>	Toothbrush tree, Sand Paper Tree	Barrenka
41	<i>Syzygium cumini</i>	Jamun	Neredu
42	<i>Trema orientalis</i>	Indian Charcoal Tree	
43	<i>Vitex altissima</i>	Peacock Chaste Tree	
44	<i>Ziziphus mauritiana</i>	Jujube	Ganga-regu

## ANNEXURE- IV. List of Perennial Medicinal Plants.

S.No.	Scientific Name	Comon name	Family	Habit
1	<i>Adenantha pavonina</i> L.	Bandi guriya	Fabceae	Tree
2	<i>Adhatoda vasica</i> L.	Addasaram	Acanthaceae	Shrub
3	<i>Aegle marmelos</i> (L.) Corrêa	Maredu	Rutaceae	Tree
4	<i>Aloe vera</i> (L.) Burm.f.	Kala banda	Asphodelaceae	Shrub
5	<i>Asparagus racemosus</i> Willd.	Pillithigalu	Asparagaceae	Straggler
6	<i>Bursera penicillata</i> (Sessé & Moc. ex DC.) Engl.	Indian Lavender	Burseraceae	Tree
7	<i>Cocculus hirsutus</i> (L.) W.Theob.	Dusarateega	Menispermaceae	Climber
8	<i>Commiphora wightii</i> (Arn.) Bhandari	Guggulu	Burseraceae	Tree
9	<i>Cymbopogon citratus</i> (DC.) Stapf	Nimma gaddi	Poaceae	Grass
10	<i>Decalepis hamiltonii</i> Wight & Arn.	Nannari	Apocynaceae	Climber
11	<i>Euphorbia tirucalli</i> L.	Pullajemudu	Euphorbiaceae	Shrub
12	<i>Lawsonia inermis</i> L.	Gorintaku	Lythraceae	Shrub
13	<i>Limonia acidissima</i> L.	Velaga	Rutaceae	Tree
14	<i>Moringa oleifera</i> Lam.	Munaga	Moringaceae	Tree
15	<i>Nyctanthes arbor-tristis</i> L.	Parijatham	Oleaceae	Tree
16	<i>Phyllanthus emblica</i> L.	Usiri	Phyllanthaceae	Tree
17	<i>Rauwolfia serpentina</i> (L.) Benth. ex Kurz	Sarpagandi	Apocynaceae	Shrub
18	<i>Senna alexandrina</i> Mill.	Sunamuki	Fabceae	Shrub
19	<i>Tinospora sinensis</i> (Lour.) Merr.	Tippateega	Menispermaceae	Climber
20	<i>Withania somnifera</i> (L.) Dunal	Ashwaganda	Solanaceae	Shrub

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## HABITAT FEATURES IN THE STUDY AREA



## HABITAT FEATURES IN THE STUDY AREA



## INVASIVE ALIAN SPECIES IN THE STUDY AREA



**Hyptis domination in the study area**



**Lantana domination in the study area**

## Diversity of Trees in the study area



*Acacia leucophloea*



*Azadirachta indica*



*Cassia fistula*



*Dalbergia lanceolaria* subsp. *paniculata*



*Dalbergia latifolia*



*Flacourtia indica*

## Diversity of Shrubs in study area



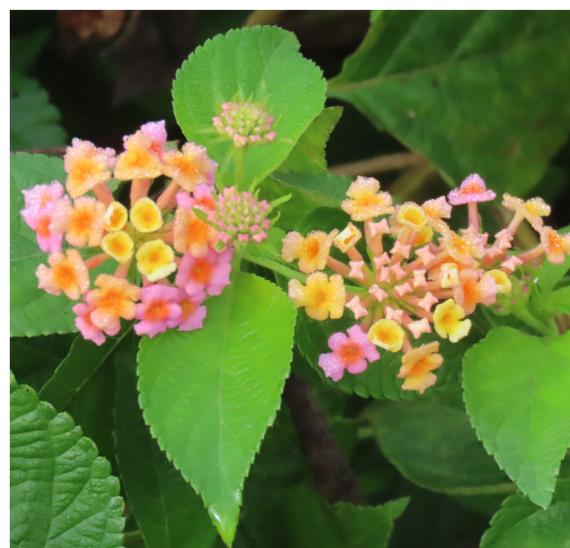
*Dendrophthoe falcata*



*Dodonaea viscosa*



*Grewia hirsuta*



*Lantana camara*



*Senna auriculata*



*Ziziphus xylopyrus*

## Diversity of Climbers in the study area



*Cassytha filiformis*



*Gloriosa superba*



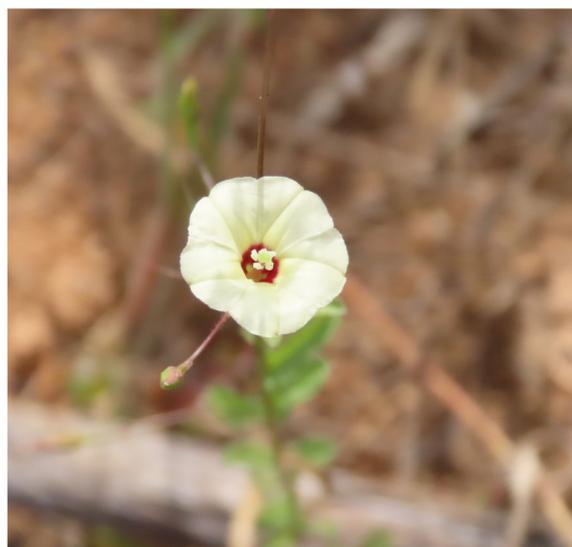
*Hemidesmus indicus*



*Ipomoea eriocarpa*



*Ipomoea obscura*



*Vigna aconitifolia*

## Diversity of Herbs in study area



*Acalypha alnifolia*



*Andrographis paniculata*



*Blepharis maderaspatensis*



*Chamaecrista absus*



*Crotalaria hebecarpa*



*Evolvulus alsinoides*

## Diversity of Herbs in study area



*Justicia glauca*



*Ludwigia perennis*



*Parasopubia delphiniifolia*



*Sida acuta*



*Spermacoce articularis*



*Waltheria indica*

## Diversity of Grasses in the study area



*Aristida setacea*



*Heteropogon contortus*



*Melinis repens*



*Paspalum scrobiculatum*



*Perotis indica*



*Sehima nervosum*

## MAMMALS IN THE STUDY AREA



**Soil digging by Wildboar**



**Indian Hare Pellets**



**Indian Palm Squirrel (*Funambulus palmarum*)**

## BIRD DIVERSITY IN THE STUDY AREA



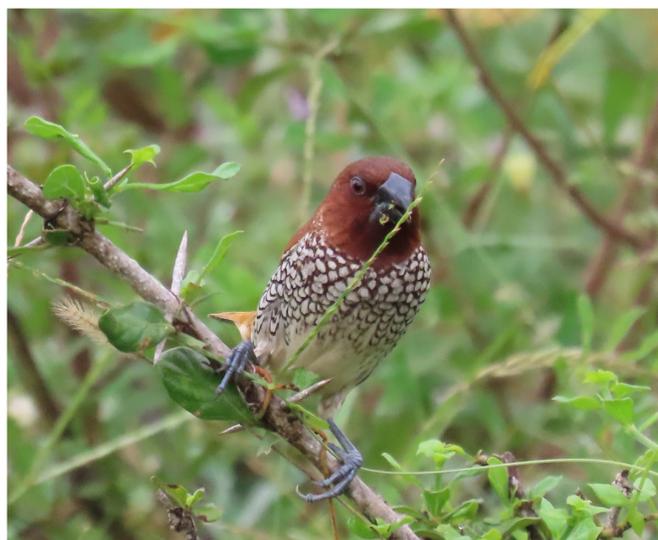
**Indian robin (*Copsychus fulicatus*)**



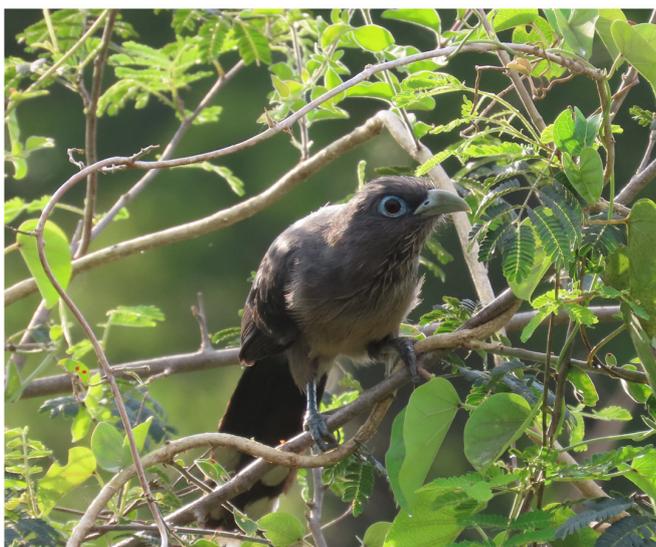
**Green Bee-eater (*Merops orientalis*)**



**White-browed Wagtail  
(*Motacilla maderaspatensis*)**



**Scaly-breasted munia (*Lonchura punctulata*)**

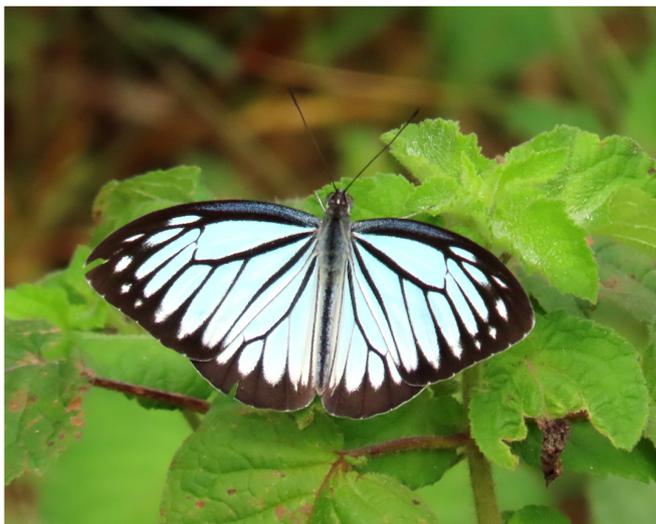


**Blue-faced malkoha  
(*Phaenicophaeus viridirostris*)**



**Cattle egret (*Bubulcus ibis*)**

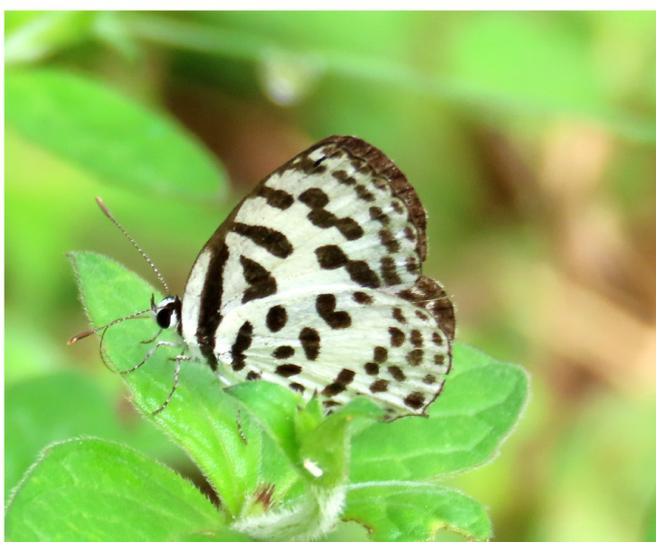
## BUTTERFLY DIVERSITY IN THE STUDY AREA



Common wanderer (*Pareronia valeria*)



Common Sailer (*Neptis hylas*)



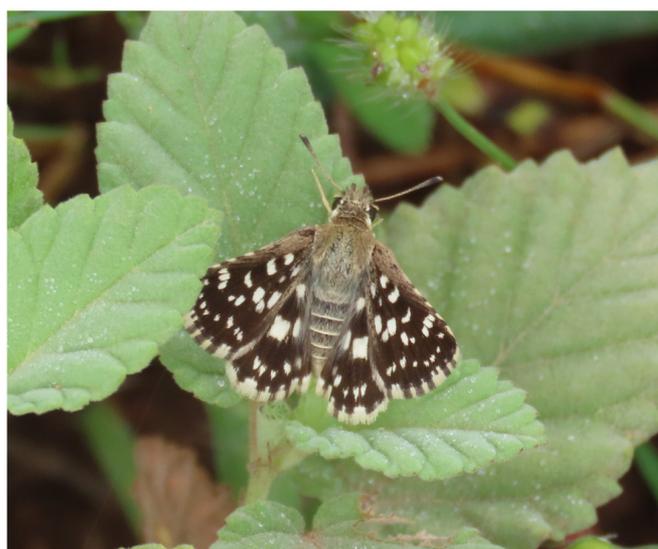
Common Pierrot (*Castalius rosimon*)



Oriental Psyche (*Leptosia nina*)

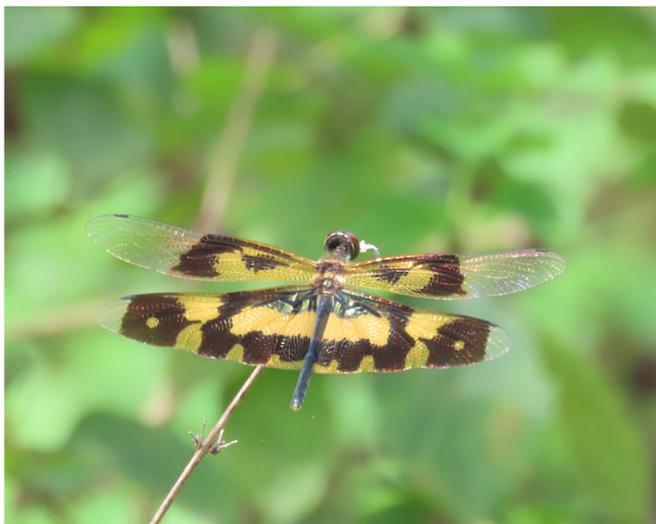


Common Cerulean  
(*Jamides celeno*)



Indian Skipper (*Spialia galba*)

## DRAGONFLY DIVERSITY IN THE STUDY AREA



Common Picture Wing (*Rhyothemis variegata*)



Indian Common Clubtail (*Ictinogomphus rapax*)



Ditch Jewel (*Brachythemis contaminata*)



Yellow Tailed Ashy Skimmer (*Potamarcha congener*)



Green Marsh Hawk (*Orthetrum sabina*)



Black Marsh Trotter (*Tramea limbata*)

# INSECT DIVERSITY IN THE STUDY AREA



Carpenter Bee



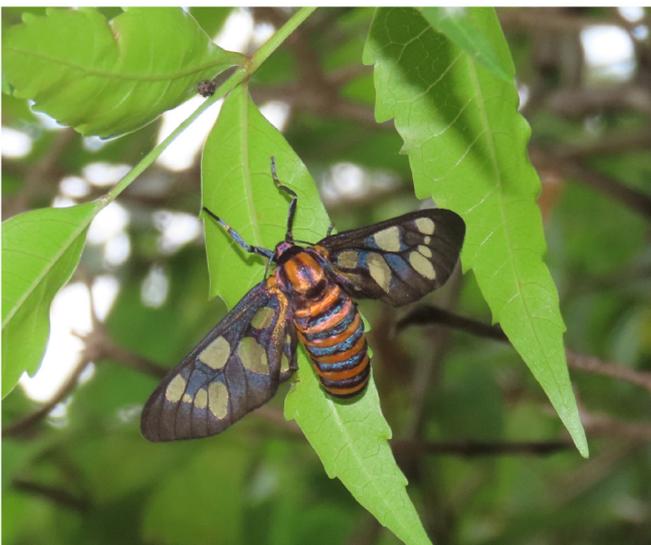
Wasp sp.



Robber fly



Wasp sp.



Yellow handmaiden (*Caeneressa diaphana*)



Bi-coloured ant

**BEFORE THE HON'BLE NATIONAL  
GREEN TRIBUNAL, SOUTHERN  
ZONE AT CHENNAI**

**Appeal No: 82 of 2021**

**DOCUMENTS FILED ON BEHALF OF  
THE  
2<sup>nd</sup> RESPONDENT**

**Filed On:**

**Filed By:**

**Y. RAMA RAO,  
B. LAKSHMI NARASIMHAN,  
Y. SAI SANKALP**

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