

**GOVERNMENT DEGREE COLLEGE**  
**RAVULAPALEM – 533238**



**ENVIRONMENT & GREEN AUDIT**  
**REPORT – 2021-22**

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## **PREFACE**

The objective of the Green audit is to ensure that the practices of the Government Degree College campus comply with the Green Policy adopted by the institution. Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components within the environmental diversity of Government Degree College. It aims to investigate environmental practices within and outside of the key sites, which will have an impact on the eco-friendly ambience.

It can highly affect the physical wellbeing of students, learning college operational costs, and the environment. The criteria, methods and recommendations used in the audit were based on the identified risks. With the following objectives, Government Degree College has made a self-inquiry on the environmental quality of the campus:

1. To map the Geographical Location of the college
  2. To document the floral and faunal diversity of the college.
  3. To document the Waste disposal system.
  4. To document the ambient environmental condition of air and water throughout the college.
  5. To promote environmental awareness through a participatory auditing process; and
- This report was compiled by a committee which was constituted by IQAC.

As there was no standard model for such an environment/green audit of campuses in the state, the committee brainstormed and developed a questionnaire. With the help of faculty members, a significant part of the data was compiled, which the committee then analysed.

The practical component, which involved measurement of quality, was entrusted with the Department of Botany, Horticulture, Zoology, Physics, and Computers, alongside with the Pollution Control Board of Govt. of Andhra Pradesh. The committee has made short term and long term suggestions to take environment protection to higher levels. It is hoped that this will receive due attention of Government Degree College authorities and all stake-holders of the Government Degree College.

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## **ABOUT COLLEGE**

### **Established Year : 1981**

Since inception in 1981, the institution has been enjoying the confidence and laurel of parent community and other state holders for its innovative practices in devising and deploying pedagogy and infrastructure in making students globally competitive.

### **Location : Ravulapalem**

Government Degree College, Ravulapalem is located on the banks of holy river Godavari in the East Godavari District of Andhra Pradesh. The beautiful serene environment amidst the vast green fields is the advantage of our college.

### **Pedagogy**

The college has good academic facilities and is committed to provide excellent education for the success of every student. Top priority is placed on high quality education and support and guidance to students in their academic and personal development. Irregularity is viewed strictly and students are motivated through counseling for better results. The students are given assignments and class tests on regular basis to prepare them for their End-Semester examination. Students' seminars are conducted so as to build confidence and develop stage presence in the students.

### **Facilities**

- Jawahar Knowledge Center (JKC) and Center for capacity building
- Digital Classrooms
- Virtual Classrooms
- Well Ventilated Classrooms

### **Methodology:**

The purpose of the green audit of Government Degree College, Ravulapalem is to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution. The methodology include: preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the

documentation, interviewing key persons and data analysis, measurements and recommendations.

Some data have also been taken from the students' research works carried out by various science departments of the college.

### **GEOGRAPHICAL LOCATION:**

The study was undertaken inside the campus of Government Degree College, Ravulapalem, Andhra Pradesh, India and lies between the coordinates of

**Lat 16°46'06.9"N Long 81°50'38.2"E.**

### **VISION & MISSION STATEMENT:**

#### **OUR VISION:**

To develop the college into a multi-faceted educational institution that provides equitable and empowering quality education to the students in general and to those from the underprivileged sections of the society in particular for shaping them into intellectually competent and skilled, self reliant, morally upright and socially committed citizens.

#### **OUR MISSION:**

To train all students through qualitative learning experiences for developing intellectual and practical capabilities, self-discipline, self-confidence, self reliance, compassion through a well designed curriculum that includes domain, general, global, extension and healthy practices.

## **EXECUTIVE SUMMARY**

### **Water management:**

As such, water is often used wisely in Government Degree College.

### **Waste management:**

Adopted by the University, the main waste management plan is filling land. Furthermore, there is currently no management plan for handling inorganic waste, notable plastics. Solid-waste management is the collection, treatment, and disposal of solid material that has been discarded because it had been previously utilised, or is no longer useful. Waste management involves the preparation of vermicompost, an eco-friendly bio-fertilizer used by plants. The campus should strictly ban plastic carry bags. However, more departments are now following a green charter and have started avoiding plastic objects for social functions and academic programmes.

### **Energy management:**

The solar panels on the roof-top of the college buildings are capable of generating sustainable electrical energy throughout the year. More so, they are an example of a renewable energy source that aid the development of an environmentally friendly college.

### **Environmental quality management**

The main intent is to reduce carbon emissions inside the campus. Many departments of our campus are maintaining gardens allowing the campus to become greener with a fair amount of biodiversity. Absence of long-term eco-restoration programmes for replacing exotic *Polyalthialongifolia* plantations, land use and development planning have been identified as opportunities for improvement.



## **INTRODUCTION**

The purpose of conducting Green Audit is to improve the environmental condition in and around the Government Degree College, Ravulapalem. Furthermore, to suggest the best protocols for adding to sustainable development. The audit included an assessment of following components:

- waste water management,
- energy saving,
- environmental condition and
- others

Green audit can assist a college in understanding their usage of energy, water and other resources. This understanding helps the college to identify gaps and opportunities for improvement, and support in the implementation of changes and offer savings both in cost and emissions. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste reduction plan. It can create health consciousness and promotes environmental awareness, values and ethics. It provides staff and students a better understanding of the benefits of the Green initiatives within the campus and improves the quality of the educational institution.

## **OBJECTIVES**

Green Audit is critical for the self-assessment and development of an eco-friendly environment. Of late, educational institutions are undertaking green audits in order to reduce environmental impacts and improve sustainability. Government Degree college Ravulapalem has been putting efforts to keep our environment clean since its inception. However, the auditing of this non-scholastic effort of the college has not been documented. Therefore, the purpose of the present green audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out this Green Audit are:

1. To map the Geographical Location of the college.
2. To document the floral and faunal diversity of the college.
3. To document the Waste disposal system.
4. To document the air quality and water quality of the college.
5. To conduct awareness programmes for a clean and green environment.

### **AUDIT PROCESS IN GOVERNMENT DEGREE COLLEGE, RAVULAPALEM**

#### **The pre audit activities include the following:**

The present audit is a Pre-audit to collect the details required for external auditing and Pre-audit activities. The pre-audit activities include the following.

1. The sites / area / division that are to be audited, need to be determined and selected.
2. The audited were informed of the date of the audit enabled them to adjust and become used to the concept.
3. The audit scope were identified. The auditee was consulted when establishing the scope.
4. The audit plan was designed in such a way that it accommodated changes based on information gathered during the audit and effective use of resources.
5. Green Audit Committee and assignment of responsibility were established.
6. The chosen working papers were collected. This facilitated the auditor's investigations on the sites.
7. The background information on the facility including the facility' organization, layout and processes, and the relevant regulations and standards, were collected.
8. The background information on the site's historical uses, and the location of soil and groundwater contamination were collected.

### **Onsite audit Activities:**

1. The opening meeting is the first step between the Green Audit team and dept. of Botany. In this meeting the purpose of audit, the procedure and the time schedule were discussed.
2. Site inspection is the second step for onsite activity. In this step the audit team discovered matters which are important to the audit but which were not identified at the planning stage.
3. Onsite phase of the audit developed a working understanding of how the facility manages the activities that influence the environment.
4. If there is one works Assessed strengths and weaknesses of the auditee's management controls and risks associated with their failure were established.
5. Gathering audit evidence i.e. collecting data and information using audit protocol.
6. External paint work on the trunk of the trees and also given the circle□with black paint to the numbering.
7. Communicated with the staff of the auditee to obtain most information.
8. Evaluated the audit evidence against the objectives established for the audit.

**Procedure followed:**

The students were divided into four groups and under the guidance of the teaching staff of the Department of Botany, each group collected data on the assigned topics. The assigned topics were as follows.

1. Identification of Plant species and their Scientific information
2. Analysis of Water storage
3. External paint work on the trunk of the tree for Beautification
4. Analysis of Carbon dioxide emitted things

**Report**

Identification of Plant species and Bio-diversity in the college campus, based on our data collected, there are 7,192 plants in the college campus. In this 179 are trees, 282 are shrubs, 6424 are herbs and remaining are climbers. So, 7,112 plants in our college contribute to the Oxygen supply that we utilize. Being situated in the urban area, our college is exposed to various atmospheric pollutants from vehicles as well as by other external means. Based on our calculation, the different sources of carbon-dioxide emitted to our college are:

1. Vehicles
  2. Refrigerators
  3. Air conditioners
  4. RO water Plant
  5. .Mobiles etc.
1. Vehicles on the days of data collection, there were 4 cars, 42 bikes and 16 scooters in our campus, which in turn proves us that these vehicles may contribute to high carbon-dioxide emission. There are 3 refrigerators, 4 air conditioners in our campus. The students, teaching and non-teaching staff and the visitors also contribute to carbon-dioxide emission.
  2. The green compost unit recently established by the dept. of Botany. All the fallen leaves and food waste are collected from the Botanical garden and College campus are used as compost.

3. Analysis of water quality and usage of the college campus possesses many water outlets. Our students have counted the total number of taps, rain water harvesting pits. We have found that in total, there are 72 taps, 1 RO water Plantanrain water harvesting pitworth 20,000 litres.

In addition to these equipment, our Department also has

- A distillation unit
- Digital calorimeter
- 1 Autoclaves
- A laminar air flow
- An incubator
- A hot air oven
- 2 centrifuges
- Digital Boards
- Podium

4. Analysis of waste generation and disposal wastes cannot be avoided in any environment. Wastes can be classified as biodegradable and non-biodegradable wastes. Biodegradable wastes include food wastes; which can be easily decomposed by the bacteria in soil. But non-biodegradable wastes are those which cannot be degraded by any organism and remain as such for many years.

### **Observations:**

1. There are sufficient water outlets for the students, staff and all the departments. But it is essential to check whether all these are working or not and whether the taps are leaking or not.
2. The students of UG, PG, Teaching and Non-Teaching staff of the college also participate actively in cleaning the college campus.



### INAUGURAL OF 'RO' PLANT

RO Plant for water purification was set up in our college campus. The plant was inaugurated by the chief guest Rev.Dr.Ch.Bhagavaiah, Bishop, Diocese of Guntur on 28.02.2022 at Ravulapalem Degree college. Head of the institutes & staff of this college attended to this function.



## **WORKING PROCESS OF RO PLANT**

Reverse Osmosis, commonly referred to as RO, is a process where you demineralize or deionize water by pushing it under pressure through a semi-permeable Reverse Osmosis Membrane.

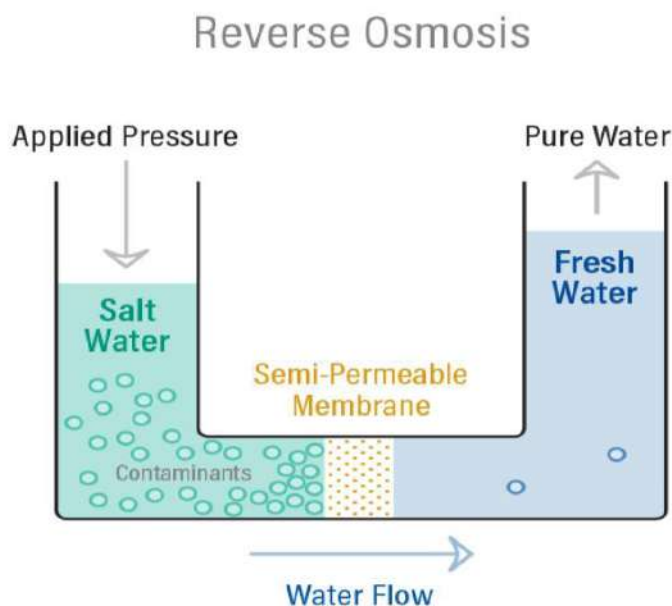
Reverse Osmosis works by using a high pressure pump to increase the pressure on the salt side of the RO and force the water across the semi-permeable RO membrane, leaving almost all (around 95% to 99%) of dissolved salts behind in the reject stream.

The amount of pressure required depends on the salt concentration of the feed water. The more concentrated the feed water, the more pressure is required to overcome the osmotic pressure.

The desalinated water that is demineralized or deionized, is called permeate (or product) water. The water stream that carries the concentrated contaminants that did not pass through the RO membrane is called the reject (or concentrate) stream.

As the feed water enters the RO membrane under pressure (enough pressure to overcome osmotic pressure) the water molecules pass through the semi-permeable membrane and the salts and other contaminants are not allowed to pass and are discharged through the reject stream (also known as the concentrate or brine stream), which goes to drain or can be fed back into the feed water supply in some circumstances to be recycled through the RO system to save

water. The water that makes it through the RO membrane is called permeate or product water and usually has around 95% to 99% of the dissolved salts removed from it.



## **REPORT ON WASTE WATER MANAGEMENT**

Waste water management is an important approach to protect water resources and it is defined as the collection, treatment, and reuse of wastewater. In wastewater collection network as one of important infrastructures, undesirable performance can lead to different problems.

The Rejected stream of the RO plant is also known as concentrate or brine stream. RO purifiers reject approximately 75% water during the purification process. This rejected water is free of bacteria, viruses and has only dissolved impurities. This waste water can be used for watering the plants in our college campus. In this process 1000litre of water storage tank was placed to collect the waste water from Reverse osmosis process, which in turn is used to water the plants in the garden.















**REPORT ON VERMICOMPOST**

Date	Activity	Description	Output
December 12, 2021	Clean-up and Preparation of Vermi Beds	Start of the vermiculture project with the cleaning and preparation of the existing vermi drum.	The vermi bed was cleaned and prepared for substrate application
December 12-20, 2021	Gathering of Substrates	Collection of substrates to be applied in the vermi drum.	Substrates such as manure of cow, partially decomposed fallen leaves, coconut fibre, vegetable waste ,loam soil were gathered.
December 21, 2021	Substrate Application	Putting of the collected substrates in the vermi drum.	collected substrates were applied in the vermi beds for anaerobic decomposition
January 3, 2022	Red wrigglers (Eiseniafoetida) Introduction	The vermi worm introduced in the substratedvermi beds were the Red wrigglers (Eiseniafoetida).	Red wrigglers were introduced in each vermi beds.
January 4-12, 2022	Moistening the substrates and feeding the Red wrigglers	Keeping the substrates moist and feeding the red wrigglers.	Moisture of 60% - 80% of the substrate was provided regularly upon vermi worm introduction. Foods for the worms were also provided every other day such as vegetable wastes.
February 15,2022	First Harvesting of Vermicast	Collecting the vermicast	Two sacks of vermicast were Collected.
February 20,2022	Re-applying of Substrates	Application of new substrates in the vermi drum	collected substrates were re-applied in the vermi beds for anaerobic decomposition
March 5, 2022	Re-introduction of the Red Wrigglers	The Red wrigglers were re-introduced in thevermi bed.	Collected Red wrigglers from the surrounding fields were re-introduced in the vermi bed.

## Data Collection

Vermiculture is the science of worm composting. Worms can eat fruit and vegetable scraps, leaving castings as the byproduct. Worm castings are called worm compost.

## Clean-up and Preparation of Vermi Beds

The students of II BZC started the vermiculture on December 12, 2021 with the clean-up of 200 litres plastic water drums and started to gather substrates.

## Substrate Application

After some days of gathering, we put the substrates to vermidrum on December 21, 2021. We put a mixture of loam soil, cow dung collected from the surrounding areas of the college, partially decomposed fallen leaves of the trees in the college campus, coconut fibre brought by the students from their houses and vegetable waste brought by the hostel students from their hostels. The succeeding application made use of mixed and different substrates. Before putting the substrate, we made sure that the materials are cut or break into smaller pieces. Finer materials could easily decompose (partial decomposition). We also mixed the different media together well for the worms to easily digest these. We have moistened the materials and cover the vermi bed with wet jute bags and tarpaulin cover to initiate anaerobic decomposition. The substrates were kept in the beds for ten days before we put the vermi worms collected by digging the soil of the surrounding farms. It took 10 to 15 days to complete anaerobic decomposition and only then that they are ready for worm consumption.

## Introducing the Vermi Worms, Red wiggler (*Eisenia foetida*)

After 12 days upon putting the substrates into the vermidrum, we introduce the vermi worms into the substrate on January 3, 2022. We used the Red wiggler (*Eisenia foetida*) in our vermicompost. Aerobic decomposition lasts for 7 – 14 days depending on the materials used and the ratio of the worms to the substrate. Within the period, we moistened (not soggy) the substrate regularly to provide the right moisture (60 - 80%) for the vermi worms to grow and multiply.

### **Feeding the Vermi Worms**

After introducing the red wigglers, we fed the worms by placing vegetable wastes and also fallen leaves of the campus and We placed the vegetable wastes in a different place each time for the worms to easily feed into it. After two weeks, the red wigglers have eaten the food waste leaving behind worm casting or compost.

### **Harvesting of Vermicompost**

Harvesting will commence 40 to 45 days after stocking of worms. Prior to harvest, we refrained from watering the substrate for the last three days to ease the separation of castings from worms and likewise preventing the castings to become compact. On February 15, we had the first harvest of the vermicast or the worm manure; we actually harvested a total of 200 kilograms which contains mixture of loam soil, cow dung, coconut fibre, vegetable waste and partially decomposed leaves.



## VERMICOMPOST PHOTOGRAPHS

**COLLECTION OF COW DUNG**



**CUTTING DRIED FALLEN LEAVES INTO FINE PIECES**



**PREPARING LOAMY SOIL TO PREPARE VERMICOMPOST**



**VERMICOMPOST BED AFTER INTRODUCING EARTH WORMS**



**MOISTENING THE VERMI BED**



## **FLORAL AND FAUNAL DIVERSITY**

### **TREE DIVERSITY OF GOVERNMENT DEGREE COLLEGE**

The tree of life provides a fundamental roadmap to understanding biodiversity, yet requires integration across scales of the biological hierarchy and a unique set of tree thinking skills. This combination can be challenging for undergraduates at the introductory level because of their preconceptions regarding distinct fields of biology compounded by the unique structure of phylogenetic trees. To address these two challenges while providing an undergraduate research opportunity, we developed an activity for introductory biology students that integrate molecular, organismal, and evolutionary biology.

This activity relies on woody plant identification, comparative morphology, and DNA sequence analysis to teach students how to reconstruct and interpret phylogenetic trees. After building separate phylogenetic hypotheses using morphological characters and molecular data, they compare their results with a master Tree of Trees to identify instances of homology and homoplasy. After delivering this activity, the majority of students scored the activity as "helpful to very helpful" in increasing their understanding of these concepts. Overall, we deliver a framework for developing comparable Tree of Trees-type activities that leverage students' interests in familiar organisms and requires them to span scales of the biological hierarchy while improving their tree thinking skills.

Plantations sequester less carbon are involved in less habitat creation and erosion control than natural forests. It planted trees replace forests like grass lands or savannas the potential for replenishing biodiversity is lost as such natural forest ecosystems have evolved to support the local biodiversity. The list of trees in our college is mentioned in the table-3.

**TABLE-3: LIST OF TREE SPECIES OF GOVERNMENT DEGREE COLLEGE**

S.no	Scientific name of the plant	Local name	Family	Habit	Uses	No.s
1.	Azadirachta indica	Neem tree	Meliaceae	Tree	Medicinal plant	59
2.	Pongamia pinnata	Kanuga	Fabaceae	Tree	Oil tree	33
3.	Tectona grandis	Teak	Lamiaceae	Tree	Timber	39
4.	Phyllanthus emblica	Amla	Uphorbeaceae	Tree	Fruit	1
5.	Syzygium cumini	Neradu	Myrtaceae	Tree	Fruit & Medicinal	1
6.	Terminalia catappa	Almond	Combretaceae	Tree	Fruit	5
7.	Mangifera indica	Mango	Anacardiaceae	Tree	Fruit	3
8.	Albizia lebbek	Drisena	Leguminaceae	Tree	Medicine & wood	9
9.	Albizia julibrissin	Pink silk tree	Leguminaceae	Tree	Medicine & wood	1
10.	Acacia catechu	Khadira	Fabaceae	Tree	Medical	2
11.	Bauhinia purpuria	Butterfly tree	Fabaceae	Tree	Medical	3
12.	Delonix regia	Royal poinciana	Fabaceae	Tree	Medical	7
13.	Roystonea regia	Fan palm	Arecaceae	Tree	Ornamental	2
14.	Araucaria columnaris	Christmas tree	Araucariaceae	Tree	Ornamental	1
15.	Swietenia macrophylla	Mahogany	Meliaceae	Tree	Timber	2
16.	Coultieria platyloba	Chakteviga	Fabaceae	Shrub	Timber	---
17.	Peltophorum pterocarpum	Yellow gold mohur	Fabaceae	Tree	Medical &	3







S.no	Scientific name of the plant	Local name	Family	Habit	Uses	No.s
					Timber	
18	Simarouba glauca	Bitter wood	Simaroubaceae	Tree	Timber	1
19	Alstoniascholaris	Block board tree	Apocynaceae	Tree	Timber & Toxic	1
20	Laburnum anagyroides	Golden chaintree	Fabaceae	Tree	Medicine & Pesticide	2
21	Ficus benghalensis	Banyan tree	Malberry	Tree	Medical	1
22	Erythrina abyssinica	Red hot pocker	Fabaceae	Tree	Medical	1
23	Terminalia arjuna	Arjun tree	Combretaceae	Tree	Medical	1
24	Vernonia cinerea	Sahadevi	Asteraceae	Herb	Medical	---
25	Alternanthera sessilis	Ponnagantikura	Amaranthaceae	Herb	Vegetable & Medical	---
26	Chrysopsis	Golden aster	Asteraceae	Herb	Ornamental	---
27	Paspalum flavidum	Yellow water cwnGrass	Poaceae	Herb	Fodder	---
28	Acalypha indica	Muripimda	Uphorbeaceae	Herb	Medical	---
29	Coleus scutellarioides	Flame nettle	Lamiaceae	Herb	Medical	---
30	Setaria pumila	Yellow fox tail	Poaceae	Herb	Fodder	---
31	Sida acuta	Nelabenda	Malvaceae	Herb	Medical	---
32	Panicum repens	Creeping grass	Poaceae	Herb	Fodder	---
33	Polypogon monspeliensis	Beard grass	Poaceae	Herb	Fodder	---



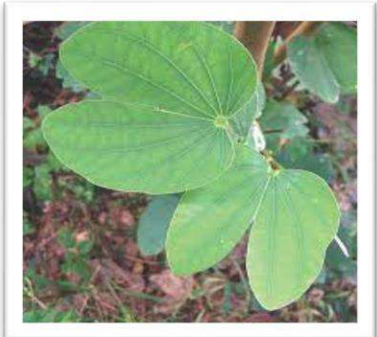

S.no	Scientific name of the plant	Local name	Family	Habit	Uses	No.s
34	Heliotropium indicum	Indian heliotrope	Boraginaceae	Herb	Medical	---
35	Euphorbia hirta	Red fivaarina nabaalu	Euphorbiaceae	Herb	Medical	---
36	Passiflora foetida	Stinking passion flower	Passifloraceae	Shrub	Ornamental	---
37	Achyranthes aspera	Uttareni	Amaranthaceae	Herb	Medical	---
38	Senna occidentalis	Coffee senna	Caesalpiniaceae	Herb	Medical	---
39	Mesospaerum suaveolens	American mint	Lamiaceae	Herb	Medicine	---
40	Tridax procumbens	Gaddichamanthi	Asteraceae	Herb	Medicine	---
41	Rumex pulcher	Bladder rock	Polygonaceae	Herb	Medicine	---
42	Digitaria ariantha	Rock finger grass	Poaceae	Herb	Fodder	---
43	Amaranthus viridis	Green amaranth	Amaranthaceae	Herb	Medicine	---
44	Croton tigliarius	Ban tulsi	Euphorbiaceae	Herb	Medicine	---
45	Ocimum basilicum	Lemon basil	Lamiaceae	Herb	Medicine	---
46	Boerhaavia diffusa	Punarnava	Nyctaginaceae	Herb	Medicine	---
47	Carpesium abrotanoides	Pigs head	Asteraceae	Herb	Medicine	---
48	Chenopodium album	Goose foot	Amaranthaceae	Herb	Medicine	---
49	Lagera aurita	Curly blumea	Asteraceae	Herb	Medicine	---

S.no	Scientific name of the plant	Local name	Family	Habit	Uses	No.s
50	Psidium guajava	Guajava	Myrtaceae	Shrub	Fruit	---
51	Sida rhombifolia	Cuban jute	Malvaceae	Shrub	Medicine	---
52	Tinospora cardifolia	Guduchi	Menispermaceae	Lianes	Medicine	---
53	Heliotropism indicum	Nagadamthi	Boraginaceae	Shrub	Medicine	---
54	Thermopsis lanceolata	Sand Coreopsis	Asteraceae	Shrub	Medicine	---
55	Datura metel	Vumetha	Solanaceae	Herb	Medicine	---
56	Xanthium strumarium	Cocklebur	Asteraceae	Herb	Medicine	---
57	Derris trifoliata	Common derris	Fabaceae	Shrub	Medicine	---
58	Cleome viscosa	Asian spider weed	Capparidaceae	Herb	Medicine	---
59	Calotropis procera	Jilledu	Asclepiadaceae	Shrub	Medicine	---
60	Symphoricarpos longiflorus	Lanspod	Fabaceae	Shrub	Perfume making	---
61	Oxalis fontana	Pulichimtha	Oxaliadaceae	Herb	Food decoration	---
62	Populus alba	Silver poplar	Salicaceae	Shrub	Medicine	---
63	Musa paradisiaca	Banana tree	Musaceae	Shrub	Fruit	---
64	Ficus elastica	Rubber tree	Euphorbiaceae	Tree	Making rubber	1
65	Euphorbia milli	Christ thorn	Euphorbiaceae	Herb	Ornamental	---
66	Opuntia monacantha	Bunny ears	Cactaceae	Herb	Ornamental	---
67	Bryophyllum pinnatum	Ranapaala	Crassulaceae	Herb	Medicine	---





S.no	Scientific name of the plant	Local name	Family	Habit	Uses	No.s
68	Annona squamosa	Custard apple	Annonaceae	Shrub	Fruit	---
69	Jasminum officinale	Jasmine	Oleaceae	Shrub	Flowering plant	---
70	Dracaena trifasciata	Snake plant	Asparagaceae	Herb	Ornamental	---
71	Dracaena colorama	Female dragon	Asparagaceae	Herb	Ornamental	---
72	Bougainvillea glabra	Paper flower	Nyctaginaceae	Shrub	Ornamental	---
73	Acalifaindica red	Muripimda	Amaranthaceae	Herb	Ornamental	---
74	Dhalia pinnata	Garden dhalia	Asteraceae	Herb	Ornamental	---
75	Durantha erecta	Golden durantha	Verbinaceae	Herb	Ornamental	---
76	Tradescantiaspatha ceacolor	REO discolor	Commilinaeae	Herb	Ornamental	---





**OVER VIEW OF COLLEGE FLORAL DIVERSITY**





S.NO	PLANT NAME	PLANT IMAGE
1	Acacia catechu	
2	Albizia julibrissin	
3	Albizia lebbek	
4	Alstonia scholaris	





5	<i>Araucaria columnaris</i>	
6	<i>Azadirachta indica</i>	
7	<i>Bahinia purpuria</i>	
8	<i>Delonix regia</i>	








9	<i>Erythrina abyssinica</i>	
10	<i>Ficus benghalensis</i>	
11	<i>Laburnum anagyroides</i>	
12	<i>Mangifera indica</i>	





13	Peltophorum petrocarpum	
14	Phyllanthus emblica	
15	Pongamia pinnata	
16	Saribus rotundifolius	




17	Simarouba glauca	
18	Swieteniamacrophyll	
19	Syzygiumcumini	
20	Tectona grandis	

21	Terminaleaarjuna	
22	Terminaleacatappa	
23	Annona squamosa	
24	Calotrophisprocera	



25	Coulteriaplathyloba	
26	Bougainvillea glabra	
27	Derris trifoliata	
28	Dypsislutescens	
29	Heliotropism indicum	

30	Jasminum officinale	
31	Musa paradisiaca	
32	Passiflora foetida	
33	Psidium guajava	

34	Sidarhombifolia	
35	Symphoricarposlongiflorus	
36	Thermopsis lanceolata	



## Plantation programme organised by the Department of Botany





## White painting on trunk of the trees. Pest cleaning before painting



## Development of Botanical garden





## Inauguration of Horticulture Garden



## Field visit to Satyanarayan nursery, kadiyapulanka





## Identification of Trees



## Identification of Creeper





## Identification of shrubs Herbaceous plants



### **FAUNAL DIVERSITY**

India has a diverse range of flora and fauna due to its environmental conditions. Keeping in view of the immense biodiversity potential, a large network of Indian Biosphere reserves, National parks, Wild life sanctuaries and sacred grooves vested for the conservation and sustainability of the valuable flora and fauna.

The geographical and ecological boundaries under which this Government Degree College categorically falls are Deccan plateau, Coastal Andhra (central). Central Coastal Andhra is blessed with a wide variety of fauna. Government Degree College is located in the proximity of Gowthami Godavari river has a vast variety of fauna ranging from annelids to insects (under Invertebrates) and amphibians, reptiles, birds to mammals (under Vertebrates). Owing to favourable climatic, terrestrial and local atmospheric conditions the common fauna inhabiting in the Government Degree College campus are tabulated as specified in Tables 1 and 2.

Table 1 and Table 2 include the fauna which are commonly found in the region in general, as well as the fauna found within the Government Degree College in particular. Majority of the fauna found in the campus consists of insects.

**INVERTEBRATES**

S.No	Category
I.	<b>Annelids</b> <ul style="list-style-type: none"> <li>• Pheretima posthuman</li> <li>• Eisenia foetida</li> <li>• Hirudo medicinalis</li> <li>• Glycera species</li> <li>• Alitta succinea</li> <li>• Helobdella species</li> </ul>
II.	<b>Arthropoda</b> <ul style="list-style-type: none"> <li>• Araneae</li> <li>• Lepisma saccharina</li> <li>• Gryllus campestris</li> <li>• Poekilocerus pictus</li> <li>• Periplaneta americana</li> <li>• Delias eucharis</li> <li>• Scolopendra</li> <li>• Anisoptera</li> <li>• Paraponera clavate</li> <li>• Apis</li> <li>• Caterpillars</li> <li>• Coleoptera</li> <li>• Culicidae</li> <li>• Musca domestica</li> <li>• Isoptera</li> <li>• Scorpiones</li> </ul>
III.	<b>Mollusca</b> <ul style="list-style-type: none"> <li>• Snails</li> <li>• Slugs</li> </ul>

TABLE-1

**VERTEBRATES**

Pertaining to the vertebrates (Table 2), wide variety of fauna in habituates in the campus ranging from amphibians to mammals. Keeping in view of the wide variety of fauna prevailing in the campus, further sustainable conservation measures are needed for the holistic protection of the Government Degree College campus fauna.

S.No	Category
I.	<b>Amphibians</b> <ul style="list-style-type: none"> <li>• Pelophylax chosonicus</li> <li>• Rana temporaria</li> <li>• Duttaphrynus melanostictus</li> </ul>
II.	<b>Reptiles</b> <ul style="list-style-type: none"> <li>• Hemidactylus</li> <li>• Calotes versicolor</li> <li>• Bungarus caeruleus</li> <li>• Naja naja</li> </ul>
III.	<b>Aves</b> <ul style="list-style-type: none"> <li>• Passeridae</li> <li>• Corvus splendens</li> </ul>
IV	<b>Mammals</b> <ul style="list-style-type: none"> <li>• Canis lupus familiaris</li> <li>• Bonnet macaque</li> <li>• Bubalina</li> <li>• Capra aegagrus hircus</li> <li>• Ovis aries</li> <li>• Rattus</li> </ul>

TABLE-2



### **A. Observations**

Cultivation and Protection of trees inside the campus are to a high standard. Each department of the Government Degree College Ravulapalem contribute to the maintenance of the garden. The students and staff are all frequently involved in gardening. In general, the quantity of E-waste generated in the campus is very low. The cartridges of laser printers are refilled outside the college campus. Administration conducts awareness programmes regarding E-waste Management and environment cleanliness with the help of various departments. The E- waste and defective items from computer laboratory are being stored properly. The institution has decided to contact approved E-waste management and disposal facility in order to dispose E-waste in a responsible manner.

### **B. Recommendations**

The following actions are recommended to further enhance the overall sustainability of Government Degree College Ravulapalem:

1. Utilise plant/organic waste for the preparation of organic bio-fertilizers
2. Regulate the vehicles inside the campus and follow “no vehicle day” at least twice a month
3. Recycle or safely dispose of white goods, computers and electrical appliances
4. Use reusable resources and containers and avoid unnecessary packaging where possible
5. Always purchase recycled resources where applicable.

### **C. Conclusions**

The institution is predominantly an undergraduate college and there is significant ongoing environmental research both by faculty and students. The environmental awareness initiatives that are being undertaken by the college administration are substantial and are clearly producing positive outcomes . The installation of solar panels, paperless work system, Vermicomposting practices and Bio fertilizer are noteworthy. The recommendations suggested in this report are to assist with further enhancement of the overall sustainability of the campus. Implementation of the recommendations would lead to a more eco-friendly campus and a sustainable community.



As part of the green audit of the campus, the following environmental elements were monitored:

1. Illumination,
2. Noise level,
3. Ventilation and
4. Indoor Air quality of the class rooms.

It was observed that Illumination and Ventilation is adequate considering the natural light and air velocity present in the campus. Noise levels in the campus were well within the limit i.e. below 50 dB at day time.

### **D. Acknowledgement**

We are grateful to the committee members of CPDC for giving us the opportunity to undertake this prestigious project and allowing us to contribute to the enhancement of the sustainability within the College Campus. We hope this initiative will promote environmental awareness and encourage students and staff to take care of the Environment and propagate these views for many generations to come.

## Copy of the Resolution, Dated 04/03/2022

The Departments of Botany, Govt Degree College, Ravulapalem met with the Green Audit Committee on 04-03-2022 to discuss about the procedure of Green Audit

We are discussed below these points

- The purpose of audit, the procedure and the time schedule were discussed.
- Collection of scientific data of the plants in our college campus by the student groups
- Analysis of the Carbon dioxide emitted things
- Analysis of the water transport system and Rain water storage methods.
- Plantation programme organised by the NSS and Department of Botany.
- Clean and green programmes.



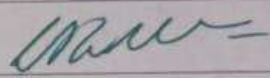

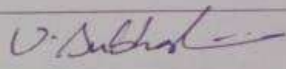
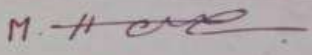
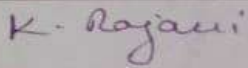

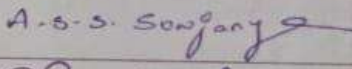
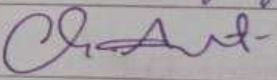
## Signatures of the student groups

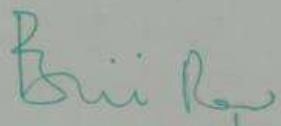
S.no	Name of the student	Signature of the student
1	Kundla. Brahma Rudra Reddy	K. Brahma rudra reddy.
2	Vetla. Kannababu.	V. Kannababu
3	Mullp. Venkannababu.	m. Venkannababu
4	Sarla. Bharu prakash Reddy	S. Bharu prakash Reddy.
5	y. Prasanth Raju.	y. Prasanth Raju.
6	Sk. Hussien	SK. Hussien.
7	y. Hari Teja.	y. Hariteja.
8	B. Rahul.	B. Rahul
9	D. Rama Krishna.	D. Rama Krishna
10	K. Mahesh	K. Mahesh
11	S. Naveen.	S. Naveen
12	B. Sangelika.	B. Sangelika
13	B. Sneha Madhurya.	B. Sneha madhurya
14	R. Likhika.	R. Likhika.
15	G. Gowthami.	G. Gowthami
16	ch. Nagababu	ch. Nagababu
17	D. Ramakrishna Rao.	D. Ramakrishna Rao
18	Vasa. Sai.	V. Sai
19	B. Manjoosha.	B. Manjoosha.
20	ch. vijaya sindhu.	ch. Vijaya sindhu

## GREEN AUDIT REPORT GOVERNMENT DEGREE COLLEGE, RAVULAPLEM

## GOVERNMENT DEGREE COLLEGE, RAVULAPALEM

## Signatures Of The Green Audit Committee

S.no	Name of the Lecturer	Designation	Signature
1	Dr.C.Krishna M.Sc.Tech.,NET.,Ph.D	Principal	
2	B.V.V.S.N.Murthy	Lecturer in Physics	
3	Smt.U.Subhashini	Lecturer in Computer Applications	
4	Smt.M.Hemalatha	Lecturer in Botany	
5	Smt.K.Rajani	Lecturer in Chemistry	
6	S.Chinna babu	Lecturer in Economics	
7	Smt.A.S.S.Sowjanya	Lecturer in Zoology	
8	Ch.Abhinay	Lecturer in Horticulture	

  
12/03/2022

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