

GREEN AUDIT REPORT

2019-20

Government Naveen College Berla

District – Bemetara (Chhattisgarh)



Surveyed & Audited

By:

1. Department of Botany
2. Department of Zoology
3. ECO Club of College

P. Gaur

PRINCIPAL
Principal Editor
Govt. Naveen College
Berla, Dist. Bemetara (C.G.)
Principal

Nivedita Mukherjee

Editor
Prof. Nivedita Mukherjee
Head, Department of Sociology

Chanchal Rajput

Editor
Prof. Chanchal Rajput
Department of Botany

GREEN AUDIT ASSESSMENT TEAM

Sno.	Member	Department
01	Mrs. Nivedita Mukharji <i>Nivedita</i>	Department of Sociology
02	Dr. Mrs. Aastha Tiwari <i>Aastha</i>	Department of Hindi
03	Mr. Anand kumar Kurrey <i>Anand</i>	Department of Physics
04	Mrs. Jyoti Mishra <i>Jyoti</i>	Department of Home Science
05	Mr. G.S. Bhardwaj <i>G.S. Bhardwaj</i>	In-charge ECO Club
06	Chanchal Rajput <i>Chanchal</i>	Department of Botany
07	Mr. Upendra Verma <i>Upendra</i>	Department of Zoology

TABLE OF CONTENTS

Sno.	Topic		Page Number
01	Introduction	-	4
02	Land Use Pattern	-	5
03	Scope of Audit	-	6
04	Objectives of Green Audit	-	6
05	Preparation	-	7
06	Site Inspection	-	8
07	Faunal Diversity	-	11
08	Noise Levels	-	12
08	Photographs	-	13
09	Conclusion	-	18

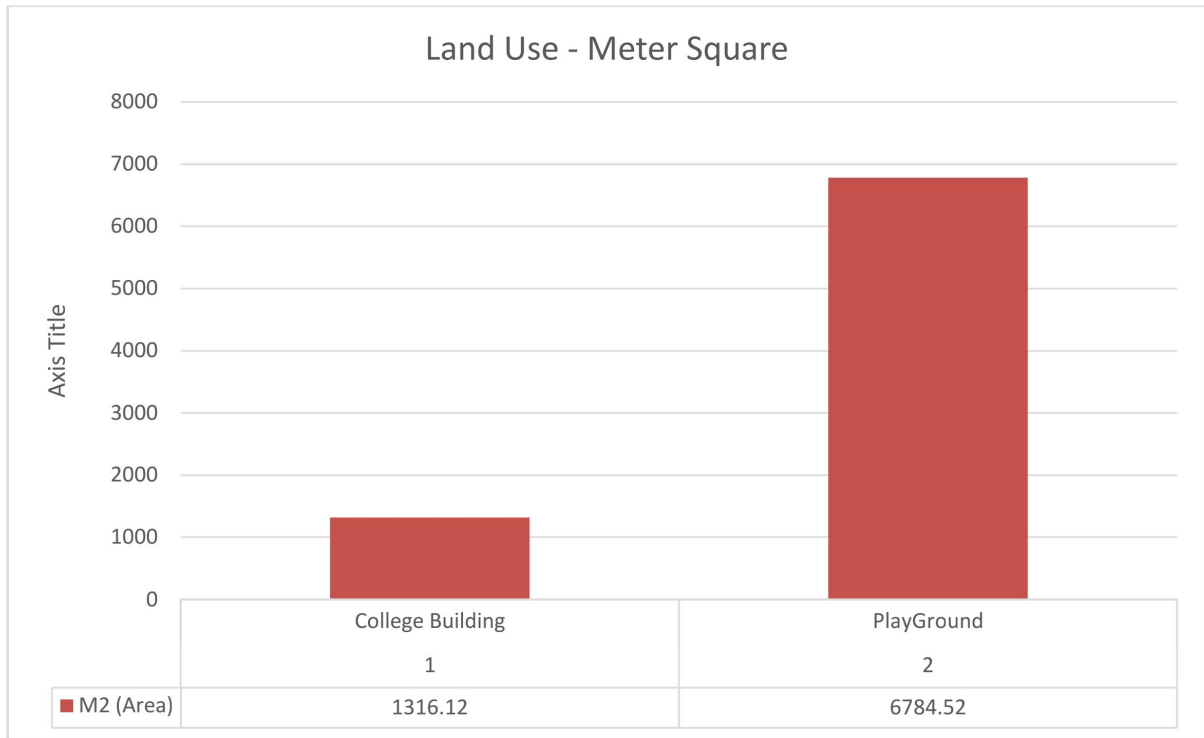
Introduction -

Govt. Naveen College, Berla, District- Bemetara is a pioneer educational institution imparting higher education to whole of Bemetara district. This college was Established in 18 July 2008 . Bestowed with the legacy of spreading education it has almost reached the Milestone of 12 Year with the Increasing strength students. This college is affiliated to Hemchand YadavVishwavidyala, Durg Chhattisgarh.

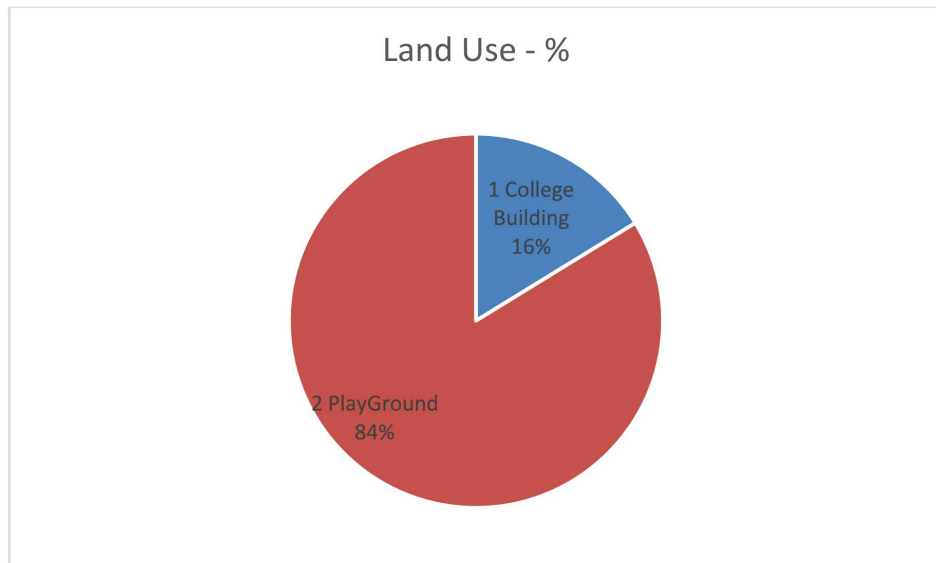
Overview of Land Use Patterns:

Land use refers to man's activities and the various uses which are carried on and derived from land. Viewing the earth from space, it is now very crucial in man's activities on natural resource. In situations of rapid changes in land use, observations of the Earth from space give the information of human activities and utilization of the landscape (Howarth 1981). Remote sensing and GIS techniques are now providing new tools for advanced land use mapping and planning. The collection of remotely sensed data facilitates the synoptic analyses of earth system, functions, patterning, and change in the local, regional as well as at global scales over time .Satellite imagery particularly is a valuable tool for generating land use map. It is a graphical representation of land use –

Sno.	Area/Building	M² (Area)
01	College Building	1316.12
02	PlayGround	6784.52



Graph - 01



Graph - 02



Scope of Audit-

Green audit serve as a means to identify opportunities to sustainable development practices, enhance environmental quality, improve health, hygiene and safety, reduce liabilities and save money and achieve values of virtue. Environmental audits can be a highly valuable tool for college in a wide range of ways to improve their environmental and economic performance and reputation -- while reducing wastages and operating costs. Once a baseline data is prepared after the auditing process, the data can serve as a point of departure for further action in campus greening. It will also help the college to compare its programmes and activities with other peer institutions, identify areas for improvement and prioritize the implementation of future projects.

Objective of Green Audit -

The general objective of green audit is to prepare a baseline report on biodiversity and other resources, measures to mitigate resource wastage and improve resource quality and sustainable practices. The specific objectives are:

- To prepare a checklist of flora and fauna diversity in and around the college campus.
- To suggest measures to improve biodiversity within the college campus.
- To assess the quantity of water usage within the college campus.

- To suggest sustainable energy usage and water conservation practices.
- To find out various sources of organic and solid waste generation and mitigation possibilities
- To inculcate values of sustainable development practices through green audit mechanism.

All plant and animal species - including humans - are linked together in a complex web of life; we depend upon biodiversity for our survival. Biodiversity is the key to healthy ecosystems and ultimately a healthy planet. It keeps the air and water clean, regulates our climate and provides us food, shelter, clothing, medicine and other useful products. Each part within this complex web diminishes a little when one part weakens or disappears. The trees work hard to keep the air we breathe clean and healthy. Their leaves take in much of the poisonous unwanted carbon dioxide in the air, and replace it with the oxygen we need for healthy living. In this process, the plants with the help of sunlight, water, minerals and the green material called Chlorophyll within the leaves change the carbon-dioxide into food for themselves. When doing this they release oxygen into the air which is vital for all life on earth. The roots of trees dig deep into the earth and hold it together so that the rain and wind cannot wash or blow it away. This is very important as the earth has only a very thin layer (seldom more than one foot) of fertile soil covering it.

Preparation –

Green auditing was done by involving different student in Eco Club and Department of Botany supported by teaching and non-teaching staff of the college. The green audit began with the teams walking through all the different wings, seeking plant and their structure. They find the botanical name, local name and their number of presence in our campus.

Eco Club Team

Sno	Name of Member	Concerned Department
01	ParmanandSahu	Department of Sociology
02	Arun Kumar	Department of Sociology
03	Monika Verma	Department of Physics
04	Vidya Sahu	Department of Physics
05	Sakshi Dewangan	Department of Physics
06	Bhuneshwari	Department of Sociology

Department of Botany

Sno	Name of Member	Concerned Department
01	DurgaSahu	Department of Botany
02	Ankit Dhar Diwan	Department of Botany
03	PayalSahu	Department of Botany
04	DeepaSahu	Department of Botany
05	Chanchal Chaube	Department of Botany
06	Tarachand	Department of Botany

Site Inspection-

Site inspection was done by Faculty and students. The process of green audit was an enriching environmental awareness programme for the students who participated in the green auditing. The experience of green auditing was a first time experience for most of the students. They shared their expectations about a green campus and gave suggestions for the audit recommendations. It encompasses an area of about 6784.52m² acre. The area is immensely diverse with a variety of tree species performing a variety of functions. Most of these tree species are planted in different periods of time through various plantation programmes organized by the authority and have become an integral part of the college. The trees of the college have increased the quality of life, not only the college fraternity but also the people around of the college in terms of contributing to our environment by providing oxygen, improving air quality, climate amelioration, conservation of water, preserving soil, and supporting wildlife, controlling climate by moderating the effects of the sun, rain and wind.

Leaves absorb and filter the sun's radiant energy, keeping things cool in summer. Many animals are dependent on these trees mainly for food and shelter. Flowers and fruits are eaten by monkeys, and nectar is a favorite of birds and many insects. Leaf – covered branches keep many animals, such as birds and squirrels, out of reach of predators. Different species display a seemingly endless variety of shapes, forms, texture and vibrant colors. Even individual trees vary their appearance throughout the course of the year as the seasons change. The strength, long lifespan and regal stature of trees give them a monument – like quality. They also remind us the glorious history of our institution. We often make an emotional connection with these trees and sometime become personally attached to the ones that we see every day. A thick belt of large shady trees in the periphery of the college have found to be bringing down noise and cut down dust and storms. The following are the tree species with whom we are being attached-

Sno.	Botanical Name	Local Name	Family	No. of Plants
1	<i>Azadiractia indica</i>	Neem	Meliaceae	40
2	<i>Acacia Arbica</i> (Lamk) Wild	Babul	Fabaceae	5
3	<i>Anona Squamosa</i> Linn.	Sitaphal	Finonaceae	4
4	<i>Codiaeum Variegatum</i>	Croton	Euphorbiaceae	10
5	<i>Datura metel</i>	Dhatura	Salanaceae	1
6	<i>Ficus religiosa</i>	Pipal	Moraceae	1
7	<i>Ficus Benghalensis</i> (Linn.)	Bargad	Moraceae	1
8	<i>Hibiscus rasa sinnensis</i>	Gudhal	Malvaccear	1
9	<i>Jatropha curcas</i>	Castor oil plant	Euphorbiaceae	1
10	<i>Ricinus Communis</i>	Arandi	Euphorbiaceae	1
11	<i>Phyllanthus Niruri</i>	Bhumi Amla	Phyllanthaceae	1
12	<i>Aucuba japonica</i>	Dold dust plant	Garryaceae	4
13	<i>Millettia Pinnata</i>	Karanji	Fabaceae	35
14	<i>SyzygiumCumini</i>	Jamun	Myrtaceae	2
15	<i>Psidium guajava</i>	Amrud	Myrtaceae	2
16	<i>Rosa centifolia</i>	Gulab	Rosaceae	3
17	<i>Saracaasoca</i>	Ashoka	Fabaceae	4
18	<i>Tagetes grandis</i> Linn.	Genda	Asteraceae	3
19	<i>Tectona grandis</i> Linn.	Sagon	verbenaceae	40
20	<i>Nerium indicum</i>	Kaner	Apocynaceae	1

21	Cascabelathevetia	Peelikaner	Apocynaceae	1
22	Ziziphus jujube	Ber	Rhamnaceae	1
23	Delonix regia	Gulmohar	Fabaceae	5
24	BryophyllumCalycinumSalisb	Pattarchatta	Crassulaceae	1
25	Cassia tara	Charota bhaji	Cesalpiniaceae	10
26	Catharanthus raseus	Sadabahar	Apocynaceae	3
27	Mangifera indica	A€m	Anacardiaceae	1
28	Ocimum Sanctum	Tulsi	Lamaceae	1
29	Citrus limon	Nimbu	Rutaceae	1
30	Lagerstroemia Speciosa	Pride of india	Lythraceae	4
31	Eucalyptus	Nilgiri	Myrtaceae	9
32	Alstoniascholaris	Blackboard tree	Apocynaceae	4
33	Dalbergia sissoo	Shisham	Fabaceae	6
34	Platyclusorientalis	Vidya patti	Cupressacear	2
35	Bauhinia purpurea L.	Butterfly three	Fabaceae	4
36	Durantaerecta	Sky flower	verbinaceae	3
37	Mussaendaerythrophylla	Red flag bush	Rubiaceae	7
38	Ficus benjamina	Benjamin fly	Moraceae	6
39	Tabernaemontanadivaricata	Chandni	Apocynaceae	1
40	jJasminumSambac	Dudhmongra	Oleaceae	2
41	Carissa Carandas	Karonda	Apocynaceae	1
42	AraueariaColumnaris	Christmas tree	Arqueariaceae	1
43	Acalypha WilkesianaMosaia	Copper plant	Euphorbiaceae	7
44	Cycas Revoluta	Sago palm	Cycadaceae	1
45	Phoenix dactylifera	Khajur	Arecaceae	1
46	Plumeria obtusa	Champa	Apocynaceae	1
47	Cordylinfruticosa	Baby doll Ti plants	Asparagaceae	5
48	Dypsislutescens	Areca plam	Arecaceae	7
49	NeolamarckiaCadamba	Cadamba	Rabiaceae	1
50	Pithecellobium dulce	Ganga imli	Fabaceae	4
51	Euphorbia milii	Crown of thorns	Euphorbiaceae	1

Faunal Diversity –

Our College is located in Bemetara district of Chhattisgarh at the northern bank of river Shivnath. The area having monsoon type of climate. The highest temperature is recorded just prior to the onset of monsoon (around May early June). The faunal Diversity of this College campus has been studied and documented as below-

Sno.	Faunal Group	Scientific Name
01	SPIDERS	Myrmachneorientalis(Family Salticidae); Nephila plipes(Family-Nephilidae); Heteropodasp (Family-Sparassidae);Phintellavitatta(Family Salticidae)
02	MOTHS & BUTTERFLIES	Antheriaassmensis;Bombyxmori;Philosamiaricini; Junoniaatlitesatlites ; Commander (Moduzaprocrisprocris); pthimabaldus ; Acraea terpsicore ; Elymniashypermnestra undularis ; Mycalesisperseusblasius ; Tanaecialepidealepidae
03	AMPHIBIANS	Duttaphrynusmelanostictus(Assian common toad), Leptobrachiumsmithi; Fejervaryapierrei; Hoplobatrachustigerinus; Hylaranatyleri; Humeranahumeralis; Hylaranaleptoglossa; Polypedatesleucomystax.
04	BIRDS	Acridotheres tristis (Common myna) Athene noctua(little owl); Pycnonotuscafer(Redvented Bulbul)

Noise Levels –

The human ear is constantly being assailed by man-made sounds from all sides, and there remain few places in populous areas where relative quiet prevails. There are two basic properties of sound, (1) loudness and (2) frequency.

Loudness is the strength of sensation of sound perceived by the individual. It is measured in terms of Decibels. Just audible sound is about 10 dB, a whisper about 20 dB, library place 30 dB, normal conversation about 35-60 dB, heavy street traffic 60-0 dB, boiler factories 120 dB, jet planes during take-off is about 150 dB, rocket engine about 180 dB . The loudest sound a person can stand without much discomfort is about 80 dB. Sounds beyond 80 dB can be safely regarded as Pollutant as it harms hearing system. The WHO has fixed 45 dB as the safe noise level for a city. For international standards a noise level upto 65 dB is considered tolerate. Loudness is also expressed in Sones. One some equals the loudness of 40 dB sound pressure at 1000 Hz. Frequency is defined as the number of vibration per second. It is denoted as Hertz (Hz).The objectives of the study were as the following:

- To assess the impact on human work efficiency due to road traffic parameters, different noise indices, and attitudinal response.
- To study the temporal pattern of road traffic the study area.
- To study the existing status of noise levels in the study area by recording the noiseintensity at various locations.
- Identification and consideration of suitable mitigation and abatement measures.

Noise level meter or noise measuring app, NoiseTube(version: 2.0.2), was used to measure the noise level.

Place	Measurement (Duration)	Minimum dBA	Maximum dBA	Average
Office – Staff Room	60 Sec.	6.73	56.69	43.68
Botany Department	60 Sec.	6.90	58.98	41.57
Library	60 Sec.	3.14	30.34	20.93
Commerce Department	60 Sec.	28.82	65.33	52.82
Front Office Area	60 Sec.	50.73	78.08	71.02
Front Gate	60 Sec.	52.23	80.02	72.35
Department of Physics	60 Sec.	28.82	65.33	52.82

Photographs –



Pic -1 Front Phase of College



Pic -2 Inner Premise – Right Side



Pic -3 Inner Premise-Left Side

Pic -4 Play Ground



Pic -5 Plantation



Pic -6 Décor Plant



Pic -7 Décor Plant



Pic -8 Inner Plant



Pic -9 Cycle Stand

Conclusion –

COMMON RECOMMENDATIONS -

- Adopt an environmental policy for the college.
- Establish a purchase policy for environmental friendly materials.
- Conduct more seminars and group discussions on environmental education.
- Students and staff can be permitted to solve local environmental problems.
- Establish water, waste and energy management systems.
- Remove damaged taps and install sensitive taps is possible.
- Awareness programs on water conservation to be conducted.
- Conduct more save energy awareness programs for students and staff.
- Create more space for planting and plant trees.
- Not just celebrating environment day but making it a daily habit.

===== * =====