

GREEN AUDIT REPORT

2021-2022



নাহৰকতীয়া মহাবিদ্যালয়
NAHARKATIYA COLLEGE

ESTD. 1964

Submitted To

The Principal

Naharkatiya College

Dibrugarh, Assam

Pin- 786610

Submitted By



JKM Consultancy Service

Solution for Green Audit

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ACKNOWLEDGEMENT

At first, we would like to thank Naharkatiya College management for their cooperation that was extended to us during the entire process.

Our special thanks go to Dr. Jyoti Prasad Konwar, Principal, Naharkatiya College, Dibrugarh for giving us necessary inputs to carry out this vital exercise of Green Audit. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

GREEN AUDIT ASSESMENT TEAM

(INTERNAL)

Dr. Jyoti Prasad Konwar, Principal

Naharkatiya College, Dibrugarh.

(EXTERNAL)

Chairperson: Dr. Dulen Saikia, Principal, JKM, MSc, M.Phil., PhD



Coordinators: Mrs. Pinaki Hazarika, HOD, Department of Botany, JKM



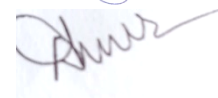
Members: Mrs. Ely Phukan, Academic Vice Principal, Science Stream



Binod Hazarika, Assistant Professor, Department of Chemistry, JKM

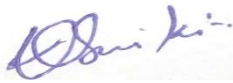


Dr. Dandeswar Dutta, Ex. Scientist D, RFRI, Jorhat Assam



GREEN AUDIT CERTIFICATE

This is to certify that a Green Audit for Naharkatiya College, Dibrugarh, Assam has been conducted for the session 2021-22 to assess Environment cost and Environment Impact Assessment and Carbon credit with a view to take sustainable steps to reduce the carbon footprint left by the college and to make environment friendly model of administration.



Dr. Dulen Saikia

Chairperson



JKM Consultancy Service

Dr. Dulen Saikia
Chairperson, G-Audit
JKM Consultancy Service



Mrs. Pinaki Hazarika

Coordinator



JKM Consultancy Service

Mrs. Pinaki Hazarika
Co-ordinator, G-Audit
JKM Consultancy Service

INTRODUCTION

Green audit is also widely known as Environmental Audit. Green Audit can be better understood as: Compliance of Environmental Laws, Audit of Environment Cost and Environment Impact Assessment, and Carbon Credit. We believe that saving 'Mother Earth' is an integral part of education and that the carbon footprint left by the college is to be reduced by sustainable steps and an environment friendly model of administration. Green audit is a valuable means for a college to determine how and where they are using the most energy or water or other resources; the college can then consider how to implement changes and make savings. It can create health consciousness and promote environmental awareness, values, and ethics. It provides staff and students better understanding of green impact on campus. Institutional self-enquiry is a natural and necessary outgrowth of a quality educational institution. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

In recent time, the Green Audit of an institution has been becoming important for self-assessment of the institution which reflects the role of the institution in mitigating the present environmental problems. Many institutions undertake lots of good measures to resolve these problems but are not documented due to lack of green documentation awareness. All these non-scholastic efforts of the administrations play an important role in ensuring the green quotient of the campus is intact. 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.

OBJECTIVES

The main objectives of carrying out Green Audit are:

- To map the Geographical Location of the college.
- To document the floral and faunal diversity of the college.
- To record the meteorological parameter of the college as well as Dibrugarh region
- where the college is situated.

METHODOLOGY

The purpose of the green audit of Naharkatiya College, Dibrugarh is to ensure that the practices followed in the campus are in accordance with the Green Policy of the country. The methodology includes:

- Collection of data.
- Physical inspection of the campus.
- Observation and review of the documentation and data analysis.

ABOUT THE COLLEGE

Naharkatiya College is an institution for higher education in Naharkatiya, Assam. The College was established in the year 1964 by the initiative of the people residing locality. It is a rural college amidst a green and serene atmosphere free from the din and bustle of the town. It is about three kilometres from Naharkatiya Town. It is well connected with the township and can be reached easily by means of bus, rickshaw and auto rickshaw which ply from morning till evening. Students may also reach the college by bicycle

From its establishment, the college has passed through long course of development in all fronts. It has adapted at and updated itself with the changing times. At present the entire campus is adequately equipped with all essential facilities. The efficient and dedicated faculty members of the college impart quality education in a student centric and friendly environment. They put in their best efforts to create well trained human resources who go out to the world with a sound intellect and cultured mind, who live by values and who can face the challenges of life skillfully, accept responsibilities and uphold the dignity of the people. We teach our students to think, solve, innovate and collaborate through hard work, brain-work and smart activities in order to bring out the best in them. Our college gives you a sense of belonging and it is always a joy to be in the campus due to an exposure to learners across different castes and communities with various talent that always enriches the texture of the mind. Apart from the curricular education you may also enjoy your time while exploring and developing your talent in sports, music and literature, as we have a standard playground, a volleyball complex, a well-equipped Gym for boys and girls and an updated copious auditorium in which cultural events are organized throughout the year.

MOTTO OF THE COLLEGE

"Culture alone evolves- The Superman".

It embodies the supreme goal and aspirations of humanity and eternal struggle and efforts of mankind for attainment of perfection, in keeping harmony with the evolutionary forces of Nature.

VISION OF THE COLLEGE

In consonance with the motto of the college enshrined in the college emblem “Culture alone evolves the superman” the vision of the college is to produce people of exceptional qualities by expanding the reach of qualitative education to the under privileged section of people in this remote and backward region and advancing their knowledge and skills through in-campus and distance modes.

MISSION OF THE COLLEGE

- To make constant endeavour to expand the reach of quality education among the younger generations in this remote, rural and underdeveloped region of the country.
- To foster the spirit of peaceful co-existence in the multicultural and multilingual social set-up by drawing students from different communities and ethnic groups.

OBSERVATIONS

TREE DIVERSITY OF NAHARKATIYA COLLEGE, DIBRUGARH

Naharkatiya College is located in the JOYPUR Block of Dibrugarh district of Assam. The college possesses many plantation areas which have a great diversity of plant 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 college authority and have become an integral part of the college. The trees of the college are prominent features that are planted to maintain the greenery and aesthetic values, store carbon and stabilize the soil. Many species of birds are dependent on these trees mainly for food and shelter. Nectar of flowers and plants is a favourite 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 colours. Even individual trees vary their appearance throughout the course of the year as the seasons change. They also remind us the glorious history of our institution in particular. 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.

Thus, the college has been playing a significant role in maintaining the environment of the entire surrounding areas. The various Plantation Plots and Plant Diversity of the college that maintains the greenery in the campus has been given in the report.

PLANTATION PLOTS OF NAHARKATIYA COLLEGE, DIBRUGARH

1. PLANTATION PLOT OF LEMON TREE

Number of Lemon Trees – 500



2. PLANTATION PLOT OF OKRA (LADY'S FINGER)

Area – 2 bighas



3. PLANTATION PLOT OF COLOCASIA

Numbers - 150



TREE DIVERSITY OF NAHARKATIYA COLLEGE

List of the Plants:

Sl. No.	Local Name	Scientific Name	Family
1	Nahor	<i>Mesua ferrea</i> L.	Guttiferae
2	Arjun	<i>Terminalia arjuna</i> L.	Combretaceae
3	Simolu	<i>Bombax malabarica</i>	Bombacaceae
5	Moha Neem	<i>Melia azadirachta</i> L.	Meliaceae
6	Aam	<i>Mangifera indica</i> L.	Anacardiaceae
7	Dimoru	<i>Ficus Glomerata</i>	Moraceae
8	Bottle brush	<i>Callistemon citrinus</i>	Myrtaceae
9	Areca palm	<i>Dypsis lutescens</i>	Arecaceae
10	Auracaria	<i>Auracaria auracana</i>	Auracariaceae
11	Papaya	<i>Carica papaya</i>	Caricaceae
12	Bokul	<i>Mimusops elengi</i>	Sapotaceae
13	Sewali	<i>Nyctanthes arbor-tritis</i>	Oleaceae
14	Fern tree	<i>Jacranda mimosifolia</i>	Bignoniaceae
15	Eucalyptus	<i>Eucalyptus maculata</i>	Myrtaceae
16	Koros	<i>Derris indica</i>	Fabaceae
17	Krishnasura	<i>Delonix regia</i>	Caesalpinaceae
18	Shilikha	<i>Terminalia chebula</i> Roxb.	Combretaceae
19	Guava	<i>Psidium guajava</i>	Myrtaceae
20	Eucalyptus	<i>Eucalyptus maculata</i>	Myrtaceae
21	Kadam Tree	<i>Anthocephalus cadama</i> Mig.	Rubiaceae
22	Bokul Tree	<i>Mimosops elengi</i> Linn.	Helotropiaceae
23	Sotiana	<i>Alstonia scholaris</i>	Apocynaceae
24	Aamlokhi	<i>Phyllanthus emblica</i>	Euphorbiaceae

25	Castor	<i>Ricinus communis</i> Lin.	Euphorbiaceae
26	Borgos	<i>Ficus benghalensis</i> L	Moraceae
27	Dimoru	<i>Ficus glomerata</i>	Moraceae
28	Kothal gos	<i>Artocarpus heterophylla</i>	Moraceae
29	Thuja	<i>Thuja orientalis</i>	Cupressaceae
30	Pine Tree	<i>Araucaria cookie</i>	Pinaceae
31	Banana (Kol Gos)	<i>Musa sapientum</i> Lin.	Musaceae
32	Narikol	<i>Cocos nucifera</i> Lin.	Areaceae
33	Kajinemu	<i>Citrus jambhiri</i>	Rutaceae
34	Bel Gos	<i>Aegel marmelos</i>	Rutaceae
35	Sojina (Drumstick)	<i>Moringa oleifera</i>	Moringaceae
36	Debodaru	<i>Polyalthia longifolia</i>	Annonaceae
37	Bogori	<i>Zizyphus jujuba</i>	Rosaceae
38	Vedailota	<i>Padaeria foetida</i>	Rubiaceae
39	Gulab	<i>Rosa rubiginosa</i>	Rosaceae
40	Bottle brush	<i>Calistemon linearis</i>	Myrtaceae
41	Joba	<i>Hibiscus rosa-sinensis</i> Lin.	Malvaceae
42	Acacia	<i>Acacia moniliformis</i> Lin.	Myrtaceae
43	Jamu	<i>Syzygium cumini</i>	Myrtaceae
44	Aparajita	<i>Clitoria ternatea</i>	Fabaceae
45	Tulsi	<i>Ocimum sanctum</i>	Lamiaceae
46	Narahingho (Curry Leaves)	<i>Murraya koenigii</i>	Rutaceae
47	Masundari	<i>Houttuynia cordata</i>	Saururaceae
48	Dupor tenga	<i>Bryophyllum sp</i>	Crassulaceae
49	Jalpai (Olive)	<i>Elaeocarpus serratus</i>	Elaeocarpaceae
50	Thuja	<i>Thuja orientalis</i>	Cupressaceae
51	Banana (Jahanji Kol)	<i>Musa chinensis</i>	Musaceae
52	Kosu	<i>Colocasia esculenta</i>	Araceae
53	Amora	<i>Spondius pinnata</i>	Anacardiaceae
54	Nayantora	<i>Catharanthus roseus</i>	Apocyanaceae
55	Areca palm	<i>Dypsis lutescens</i>	Areaceae
56	Boga Chandan	<i>Santalum album</i> L	Santalaceae
57	Ronga Chandan	<i>Adenantha pavonina</i>	Fabaceae
58	Cycas	<i>Cycas revoluta</i>	Cycadaceae
59	Ezar	<i>Lagerstroemia speciosa</i>	Lythraceae
60	Radhasura	<i>Caesalpinia pulcherrima</i>	Caesalpinaceae

PHOTO GALLERY



Mesua ferrea L. (Nahor)



Derris indica



Elaeocarpus s (Olive)



Phyllanthus emblica (Amla)



Syzygium cumini (Jamu)



Delonix regia(Krishnasura)



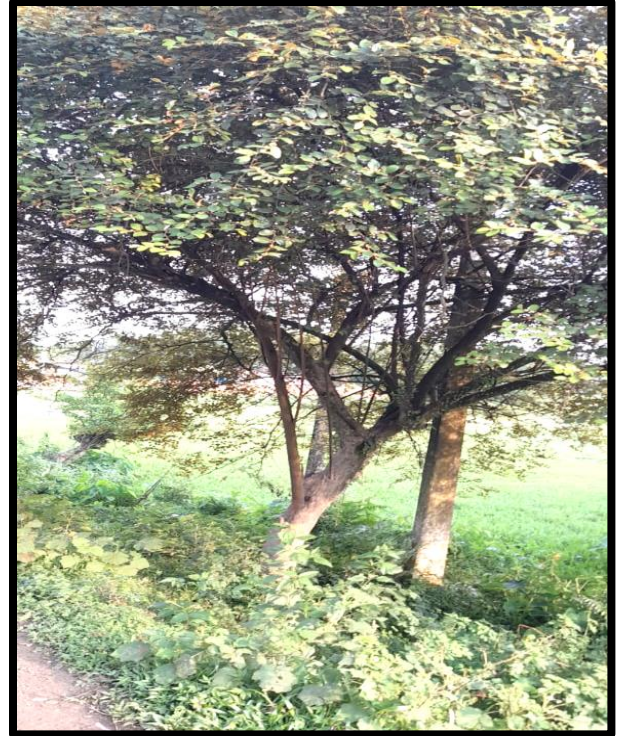
Pinus kesiya (Shillong Pine)



Polyalthia longifolia (Debodaroo)



Musa chinensis (Jahanji Kol)



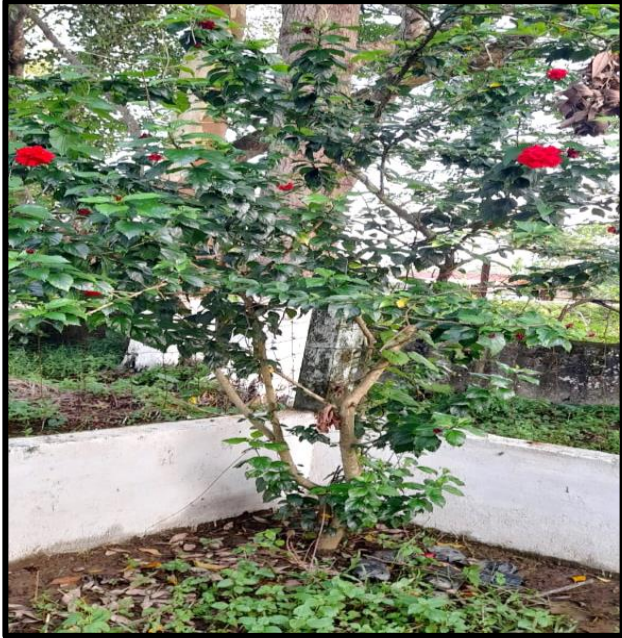
Zizyphus jujuba (Bogori)



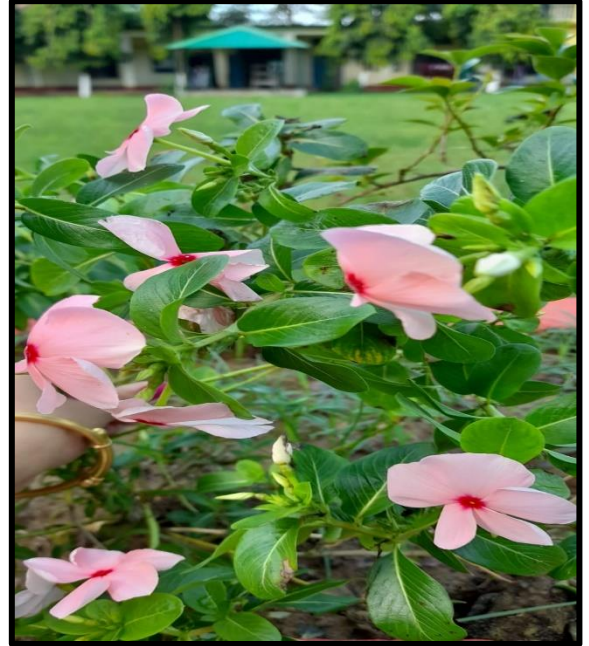
Ficus benghalensis (Borgos)



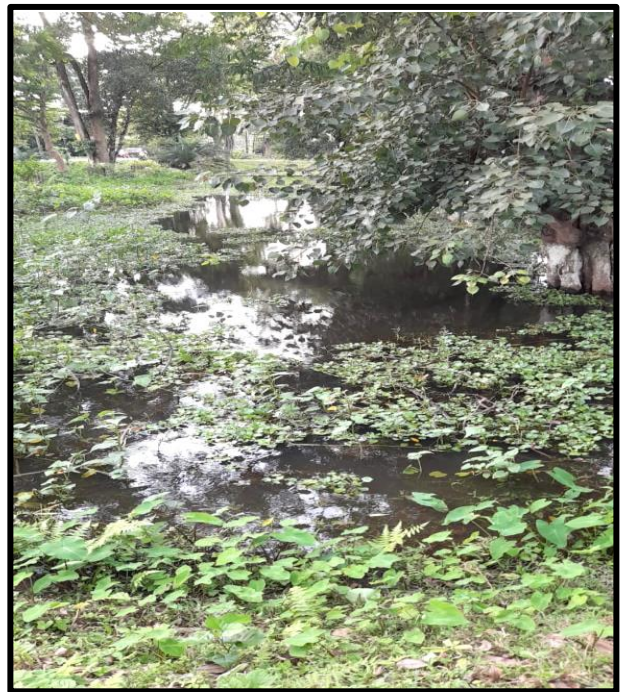
Thuja orientalis



Rosa chinensis



Catharanthus roseus



A view of the Terrestrial and Hydrophytic vegetation of the College

FAUNAL DIVERSITY IN NAHARKATIYA COLLEGE

The Nahorkatiya College is located in the Joypur Block of Dibrugarh District of Assam. The college possesses many plantation areas which have a great diversity of plant species performing a variety of functions. In this region, the wet season is hot, oppressive, and partly cloudy and the dry season is warm and mostly clear. Over the course of the year, the temperature typically varies from 51°F to 88°F and is rarely below 47°F or above 94°F. The climatic conditions in the Dibrugarh district as a whole, and particularly in, Naharkatiya College is ideal for a diverse range of flora and fauna to thrive and contribute to the rich biodiversity of the district.

The following faunal diversity has been studied and documented in Naharkatiya College campus:

Table: Common and Scientific names of birds and animals

S.No	Common Name	Scientific Name
1.	Common Myna	<i>Acridotheres tristis</i>
2.	White breasted waterhen	<i>Amaurornis phoenicurus</i>
3.	House Sparrow	<i>Passer domesticus</i>
4.	Crow	<i>Corvus sp.</i>
5.	Cuckoo	<i>Cuculidae</i>
6.	Snake	<i>Naja naja</i>
7.	Cattle egret	<i>Bubulcus ibis</i>
8.	Butter Fly	Danaus Genutia
9.	Common pigeon	<i>Columba livia</i>
10.	Garden tiger moth	<i>Arctia caja</i>
11	Bat	<i>Chiroptera</i>
12	Indian owl	<i>Bubo benghalensis</i>
13	Leech	<i>Hirudinea</i>
14	Earthworm	<i>Eisenia foetida</i>
15	Goat	<i>Capra aegagrus hircus</i>
16	Ceylon hawk cuckoo	<i>Hierococyx varius.</i>
17	Cow	<i>Bos Taurus</i>

NOISE LEVEL IN THE SURROUNDING OF NAHARKATIYA COLLEGE

Noise measurement, also known as sound level monitoring, is a process that determines the magnitude of noise in a specific area, such as an industrial or residential area. As noise pollution has increased exponentially in recent years, this process is part of environmental monitoring and testing. Sound or noise has two important properties:

- **Loudness:** The intensity of a person's perception of sound is defined as loudness. Decibels are used to quantify it. A whisper is about 20 dB, a library is about 30 dB, normal conversation is about 35-60 dB, heavy street traffic is about 60-80 dB, boiler factories are about 120 dB, jet planes during take-off are about 150 dB, and rocket engines are about 180 dB. The loudest sound a person can tolerate without feeling ill is around 80 decibels (dB). Sounds above 80 decibels (dB) can be considered Pollutants because they harm the hearing system. The WHO has established 45 decibels as the safe noise level for cities. Noise levels of up to 65 dB are considered tolerable by international standards. Sones are another way to express loudness. One sone is equal to 40 decibels of sound pressure at 1000 hertz. The number of vibrations per second is defined as frequency. Hertz is the abbreviation for it (Hz).
- **Frequency:** The frequency of sound is defined as the number of pressure variations per second that occur when sound travels through air and is measured in Hertz (Hz). The higher the frequency, the higher pitched the sound is perceived to be.

MATERIALS, STUDY AREA & METHODS

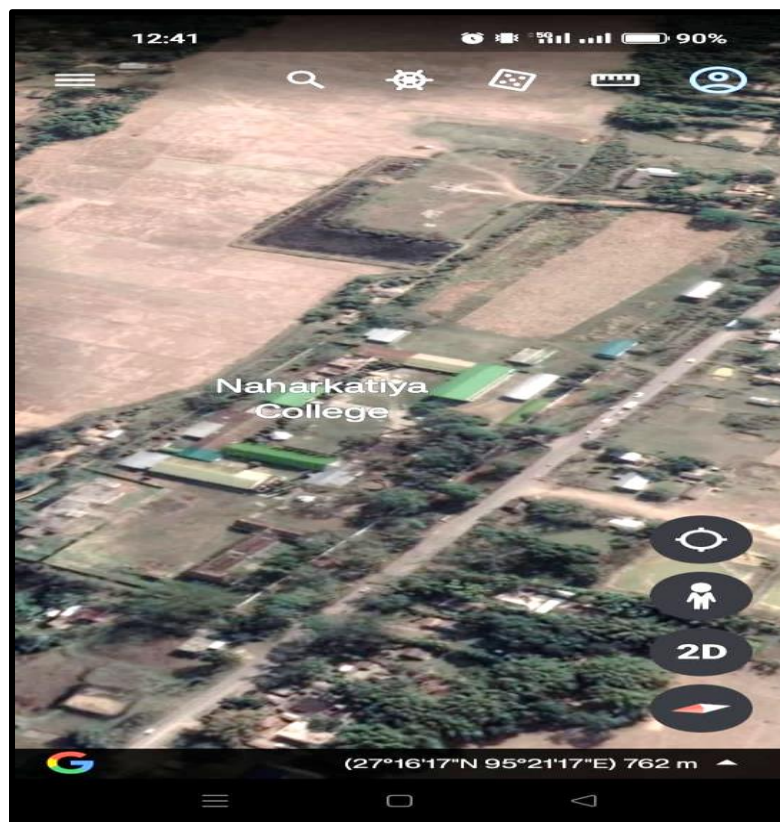
Noise level meter or noise measuring app (Sound Meter), is used to measure the noise level. Noise test pro detect of any noise, music or sound in the surrounding area. It will measure the noise level of any area in maximum, minimum and average decibels.



Figure: Noise Measurement by Sound Meter App

DESCRIPTION OF THE COLLEGE SITE

The Naharkatiya College located in Dibrugarh district of Assam possesses many plantation areas which have a great diversity of plant species performing a variety of functions. It is situated in a green and serene atmosphere free from the din and bustle of the town. Though, the college is about three kilometers away from Naharkatiya, it is well connected with the township. The sprawling college campus is located at a beautiful site surrounded by paddy fields, tea garden and oil fields. The unique green surrounding of the college is congenial to pursuit of studies.



MEASUREMENT PROCEDURE:

The noise level was measured at various important locations of the college area. The measurements were taken for 60 seconds at each location during the day (9 a.m.-3 p.m.) and are recorded. Screen shots of noise measurements were taken on the app immediately at the 60th second of each measurement.

RESULTS:

The results of the experiments at different places have been tabulated in the following table

Table 1: Measurements of Noise in and around Naharkatiya College, Dibrugarh

<i>PLACE</i>	<i>MEASUREMENT (Duration in Sec.)</i>	<i>MINIMUM (dBA)</i>	<i>MAXIMUM (dBA)</i>	<i>AVERAGE (dBA)</i>
Office	60	58.8	85.1	67.2
Library	60	61.1	86.5	69.1
Corridor	60	42.0	85.8	64.8
Canteen	60	58.8	85.1	67.2
Principal office	60	52.0	68.9	57.7
College gate	60	48.3	69.7	56.1

Source: The measurements were taken with the help of sound meter app. The measurements of noise have been recorded in and outside of college area:

Inside the campus:

42 to 85.8 (dBA)

Outside the campus:

48.3-69.7(dBA)

WEATHER DATA MONTH WISE DIBRUGARH (Source: Google)

Location: 27.27'22''N, 94.54'45'' E

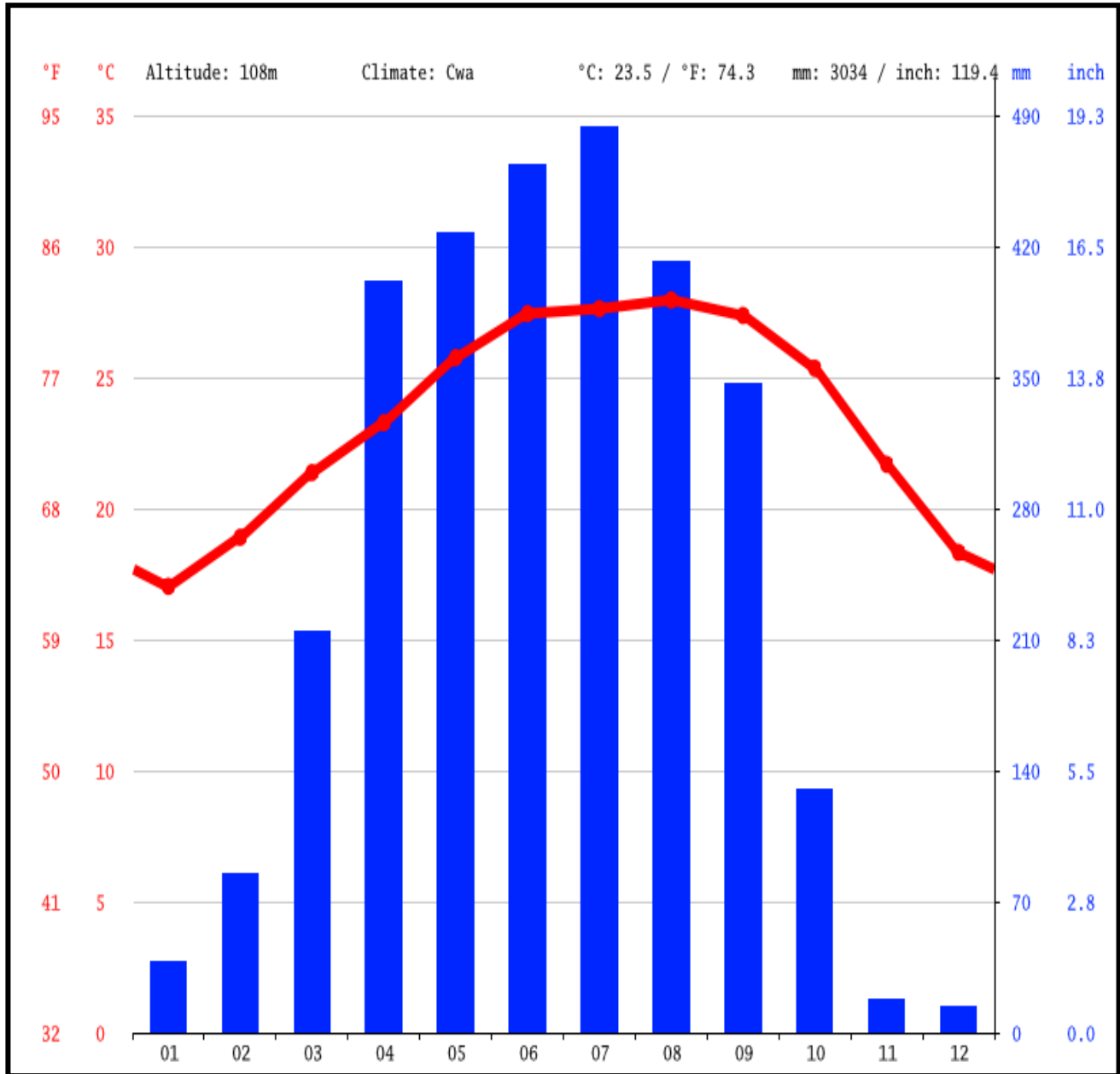
The climate in Dibrugarh is warm and temperate. Dibrugarh is in the northern hemisphere. The variation in the precipitation between the driest and wettest months is 470 mm | 19 inches. The variation in temperatures throughout the year is 10.9 °C | 19.7 °F.

The month with the highest relative humidity is July (86.26 %). The month with the lowest relative humidity is March (71.42 %). The month with the highest number of rainy days is July (27.20 days). The month with the lowest number of rainy days is December (2.37 days).

	January	February	March	April	May	June	July	August	September	October	Novem ber	Decem ber
Avg. Temperature °C (°F)	17 °C (62.7) °F	18.9 °C (66) °F	21.4 °C (70.5) °F	23.3 °C (73.9) °F	25.8 °C (78.4) °F	27.4 °C (81.4) °F	27.6 °C (81.7) °F	28 °C (82.3) °F	27.4 °C (81.3) °F	25.4 °C (77.6) °F	21.7 °C (71) °F	18.3 °C (65) °F
Min. Temperature °C (°F)	12.3 °C (54.2) °F	14.4 °C (57.9) °F	17 °C (62.6) °F	19.8 °C (67.6) °F	22.7 °C (72.8) °F	25 °C (77) °F	25.4 °C (77.8) °F	25.5 °C (77.9) °F	24.8 °C (76.6) °F	22 °C (71.7) °F	17.6 °C (63.6) °F	13.8 °C (56.9) °F
Max. Temperature °C (°F)	22.1 °C (71.7) °F	23.7 °C (74.6) °F	25.8 °C (78.5) °F	26.9 °C (80.4) °F	29.1 °C (84.5) °F	30.4 °C (86.7) °F	30.4 °C (86.7) °F	30.9 °C (87.6) °F	30.5 °C (86.9) °F	28.9 °C (84.1) °F	26.1 °C (78.9) °F	23.2 °C (73.8) °F
Precipitation / Rainfall mm (in)	38 (1)	85 (3)	214 (8)	401 (15)	427 (16)	464 (18)	484 (19)	412 (16)	347 (13)	130 (5)	18 (0)	14 (0)
Humidity (%)	75%	72%	71%	79%	81%	84%	86%	85%	84%	81%	76%	76%
Rainy days (d)	4	7	11	14	17	20	20	20	17	9	2	2
avg. Sun hours (hours)	8.2	8.6	8.9	8.4	9.1	9.1	8.5	8.4	8.7	9.0	8.8	8.4

Table: Weather report of Dibrugarh District for the period of 2021-22

CLIMATE GRAPH MONTH WISE



WASTE DISPOSAL IN THE COLLEGE CAMPUS

Generation of wastes from tree droppings and lawn management is a major solid waste generated in the campus. They are segregated at source by providing separate dustbins for disposal of bio-degradable and plastic waste. The biodegradable waste is collected and disposed in a pit for decomposition. The compost produced is then used in the garden area of the college.



A VIEW OF THE COLLEGE CAMPUS

