

**CHECKLIST OF FLORA IN THE COLLEGE
CAMPUS AND BOTANICAL GARDEN**

NONGSTOIN COLLEGE

2022



CHECKLIST OF FLORA IN THE COLLEGE CAMPUS AND BOTANICAL GARDEN

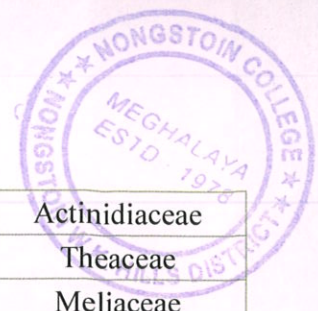
Plant Diversity: To create and sustain green cover, eco-friendly atmosphere, pure oxygen, and for enhancing the scenic beauty of the campus, the college aims at sustaining the prevalent natural vegetation in and around the campus. Plants are an important factor in a habitat as they provide structure, food and shelter, thereby contributing to the biodiversity of a site. Most of these plant species are medicinally important and some of these are in ethnobotanical use. Trees for instance play an important ecological role; a single mature tree will absorb up to 48 pounds of carbon dioxide from the atmosphere, and release it as oxygen thereby improving the quality of air.

The assessment includes understanding present vegetation composition which includes trees, shrubs, climbers and herbaceous elements in and around campus.

Identification of plant species: The college campus has a rich diversity of plant species. Faculty members of the Department of Botany audited and identified various plant species with the help of flora.

Total number of 95 plant species belonging to different families of both cryptogams and phanerogams have been identified.

Sl. No.	Botanical name	Common/ Vernacular name	Family
TREE SPECIES			
1	<i>Araucaria columnaris</i>	New Caledonian pine	Araucariaceae
2	<i>Callistemon viminalis</i>	Bottle brush	Myrtaceae
3	<i>Camellia japonica</i>	Japanese camellia	Theaceae
4	<i>Chukrasia velutina</i>	Bogipoma	Meliaceae
5	<i>Citrus limon</i>	Sohjew	Rutaceae
6	<i>Citrus sinensis</i>	Soh niamtra	Rutaceae
7	<i>Cryptomeria japonica</i>	Kseh bilat	Cupressaceae
8	<i>Cupressus bakeri</i>	Kseh blei	Cupressaceae
9	<i>Cupressus sempervirens</i>	Kseh blei	Cupressaceae
10	<i>Docynia indica</i>	Sohphoh	Rosaceae
11	<i>Exbucklandia populnea</i>	Pipli tree	Hamamelidaceae
12	<i>Grivelia robusta</i>	Silver oak	Proteaceae
13	<i>Mangifera indica</i>	Sohpieng	Anacardiaceae
14	<i>Musa sp.</i>	Kait	Musaceae
15	<i>Myrica esculenta</i>	Sohphie	Myricaceae
16	<i>Pinus kesiya</i>	Kseh khasi	Pinaceae
17	<i>Podocarpus neriilolius</i>	Brown pine	Podocarpaceae
18	<i>Prunus cerasoides</i>	Dieng cherry	Rosaceae
19	<i>Prunus nepalensis</i>	Sohiong	Rosaceae
20	<i>Prunus persica</i>	Soh phareng	Rosaceae
21	<i>Psidium guajava</i>	Sohprium	Myrtaceae



22	<i>Saurauria madrensis</i>	Saurauria tree	Actinidiaceae
23	<i>Schima wallichii</i>	Dieng ngan	Theaceae
24	<i>Toona ciliate</i>	Poma	Meliaceae
SHRUBS, HERBS, FERNS, GRASSES, MOSSES			
25	<i>Ageratum conyzoides</i>	Ksangdngiem	Asteraceae
26	<i>Ambrosia artimisifolia</i>	Kynbat japan rit	Asteraceae
27	<i>Artemesia vulgaris</i>	Kynbad jaiaw	Asteraceae
28	<i>Begonia palmata</i>	Jajewmaw	Begoniaceae
29	<i>Bidens pilosa</i>	Soh byrthit	Asteraceae
30	<i>Centella asiatica</i>	Khliang syiar	Apiaceae
31	<i>Colocasia esculenta</i>	La wang	Araceae
32	<i>Crassocephalum crepidioides</i>	Fireweed	Asteraceae
33	<i>Curcuma aromatica</i>	Shynrai khlaw	Zingiberaceae
34	<i>Cynodon dactylon</i>	Wire grass	Poaceae
35	<i>Cyperus difformis</i>	Rice sedge	Cyperaceae
36	<i>Cyperus erythrorhizos</i>	Redroot flatsedge	Cyperaceae
37	<i>Cyperus rotundus</i>	Purple nutsedge	Cyperaceae
38	<i>Dicranopteris sp.</i>	Tyrkhang	Gleicheniaceae
39	<i>Drymaria cordata</i>	Heartleaf	Caryophyllaceae
40	<i>Eleusine indica</i>	Goose grass	Poaceae
41	<i>Erigeron karvinskianus</i>	Kynbat tiew star	Asteraceae
42	<i>Eupatorium adenophorum</i>	Bat iong	Asteraceae
43	<i>Fagopyrum acutatum</i>	Jarain	Polygonaceae
44	<i>Galinsoga parviflora</i>	Potato weed	Asteraceae
45	<i>Hedychium sp</i>	Shynraikhlaw	Zingiberaceae
46	<i>Houttuynia cordata</i>	Jamyrdoh	Saururaceae
47	<i>Hypocharis radicata</i>	Jhur khang	Asteraceae
48	<i>Lantana camara</i>	Tiewpangkhlieh	Verbanaceae
49	<i>Osbeckia crinita</i>	Sohthud	Melastomataceae
50	<i>Oxalis latifolia</i>	Soh dkhjew	Oxalidaceae
51	<i>Panax pseudoginseng</i>	Jyngseng	Araliaceae
52	<i>Plantago major</i>	Shkor blang	Shkor blang
53	<i>Potentilla fulgens</i>	Lynniang	Rosaceae
54	<i>Pouzolzia hirta</i>	Memsleh	Urticaceae
55	<i>Pteris sp.</i>	Tyrkhang	Pteridaceae
56	<i>Ranunculus repens</i>	Creeping buttercup	Ranunculaceae
57	<i>Rhus semialata</i>	Soh-ma	Anacardiaceae
58	<i>Rosa indica</i>	Diengtiew-jain heh	Rosaceae
59	<i>Rubus ellipticus</i>	Sohpru	Rosaceae
60	<i>Rumex nepalensis</i>	Jaba	Polygonaceae



61	<i>Solanum barbisetum</i>	Sohshiah	Solanaceae
62	<i>Solanum khasianum</i>	Sohpdok	Solanaceae
63	<i>Sonchus asper</i>	Jalynniar	Compositae
64	<i>Spilanthes acmella</i>	Bad-stem	Asteraceae
65	<i>Trifolium ripens</i>	White clover	Fabaceae
66	<i>Anthoceros</i>	Hornworts	Anthocerotaceae
67	<i>Marchantia</i>	Liverworts	Marchantiaceae
68	<i>Sphagnum</i>	Peat moss	Sphagnaceae
69	<i>Thysanolaena maxima</i>	Broom	Poaceae
SEASONAL VEGETABLES			
70	<i>Allium cepa</i>	Onion	Amaryllidaceae
71	<i>Brassica oleracea var. capitata</i>	Cabbage	Brassicaceae
72	<i>Brassica spp.</i>	Mustard	Brassicaceae
73	<i>Capsicum annum</i>	Green Chilly	Solanaceae
74	<i>Colocasia esculenta</i>	Colocasia	Araceae
75	<i>Coriandrum sativum</i>	Coriander	Apiaceae
76	<i>Curcuma longa</i>	Turmeric	Zingiberaceae
77	<i>Phaseolus vulgaris</i>	Beans	Fabaceae
78	<i>Solanum lycopersicum</i>	Tomato	Solanaceae
79	<i>Zingiber officinale</i>	Ginger	Zingiberaceae
ORNAMENTAL PLANTS			
80	<i>Alstroemeria</i>	Peruvian Lily	Alstroemeriaceae
81	<i>Antirrhinum</i>	Snapdragon	Plantaginaceae
82	<i>Aster</i>	Aster	Asteraceae
83	<i>Bougainvillea</i>	Bougainvillea	Nyctaginaceae
84	<i>Calendula</i>	Pot marigold	Asteraceae
85	<i>Chrysanthemum spp.</i>	Chrysanthemum	Asteraceae
86	<i>Cineraria</i>	Cineraria	Asteraceae
87	<i>Dahlia</i>	Dahlia	Asteraceae
88	<i>Freesia</i>	Freshers	Iridaceae
89	<i>Geranium</i>	Cranesbills	Geraniaceae
90	<i>Rosa spp.</i>	Rose	Rosaceae
91	<i>Tagetes</i>	Marigold	Asteraceae
92	<i>Dendrobium nobile</i>	Dendrobium	Orchidaceae
93	<i>Cymbidium spp.</i>	Cymbidium	Orchidaceae
94	<i>Dendrobium fimbriatum</i>	Dendrobium	Orchidaceae
95	<i>Paphiopedilum spp.</i>	Ladies slipper	Orchidaceae

Biodiversity Audit Committee

1. Dr. J. V. Marbaniang
Department of Botany
2. Dr. L. Kharwanlang
Department of Botany
3. Dr. H. K. Bani
Department of Zoology
4. Ms. A. Syiemlieh
Department of Biochemistry

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H. K. Bani

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L. K.

Principal
Nongstoin College
Nongstoin

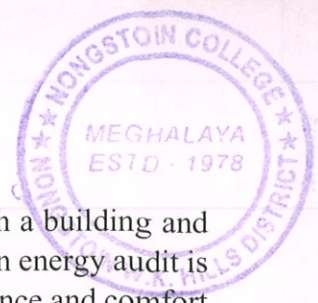




ENERGY AUDIT

NONGSTOIN COLLEGE

2022



ENERGY AUDIT

An energy audit determines the amount of energy consumption affiliated with a building and the potential savings associated with that energy consumption. Additionally, an energy audit is designed to understand the specific conditions that are impacting the performance and comfort in the facility to maximize the overall impact of energy-focused building improvements. This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliances, and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment. An energy audit usually commences with the collection and analysis of all information that may affect the energy consumption of the building or premises, then follows with reviewing and analyzing the condition and performance of various building services installations and building management, with an aim at identifying areas of inefficiency and suggesting means for improvement.

Energy auditing is therefore essential for any environmentally responsible institution which will contribute to conserve the environment and to enhance sustainable development.

ENERGY USAGE

Electricity charges – Rs 12,000 per month (approx)

Generator fuel (Diesel Generator Set) – 30 Litres per month

Gas plan (Petrol) – 40 Litres per month

Checklist of electrical/electronic equipments in college

Sl. No.	Devices	No.
1	Number of CFL bulbs	8
2	Number of LED bulbs	27
3	Tube lights	269
4	Computers	65
5	Refrigerators	1
6	Water pump	3
7	Photocopier	4
8	Printers	5
9	LCD projector	15
10	Television	2
11	Number of inverters	1
12	Number of water heaters	2
13	Scanner	3
14	CCTV DVR	2
15	Electric kettle	4

The total energy utilization of the college for different purposes is approximately **4170.16** kWh/month. Electricity charges per month is Rs. **12,000/-**month (Approx).

Non-conventional category of energy like solar energy will be a good alternative for efficient energy management system for the college. Energy saving through the replacement of CFL lamps and tube lights to LED light could be a good option. Awareness programmes for the stakeholders to save energy may also increase sustainability in the utilization of various energy source.

Existing energy management methods in the campus:

- Electrical equipments are turned off when not in use
- Older and damaged equipments are replaced
- Wiring and electrical maintenance are periodically monitored and replacements are made.
- Use computers and electronic equipments in power saving mode.
- Raise awareness by encouraging staffs and students to help in monitoring energy consumption and implement corrective actions.

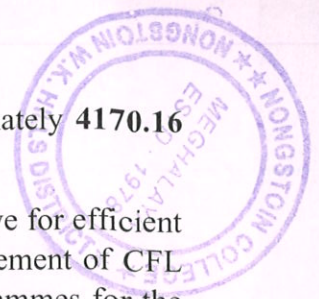
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Principal
Nongstoin College
Nongstoin.

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NONGSTOIN COLLEGE
WATER AUDIT
YEAR 2022



WATER AUDIT

Water audit is a part of green or environmental audit which are identified with the inspection of work directed inside the institutions or organisations in order to ensure effective management tools for minimizing losses, optimizing various uses and thus, conservation of water. The National Assessment and Accreditation Council (NAAC) take a genuine note of this angle while reviewing education institutes. Along these lines, water audit is performed in the college with various aspects of water such as sources, supply, utilization, appliances, disposal and fixtures etc. It is therefore essential that any environmentally responsible institution should examine its water use practices.

Objectives:

- To utilize water resources effectively and more efficiently
- To keep track of excess usage of water
- To determine water loss and leakages path
- For planning of water storage and supply
- For cost-benefit optimum recovery of water loss

Water Storage Facilities:

Location	Capacity in Litres	No. of times filled/day
College Building		
Water tank	5,000	1 per day
RCC Reservoir	10,000	1 per week
Water treatment plant	2,000	1 per week
Library		
Water tank	500	1 per day
Canteen		
Water tank	1,000	2 per day
Principal's Residence		
Water tank	1,000	1 per day
Girls' Hostel		
Water tank	1,500	1 per day
RCC Reservoir	5,000	1 per week
Boys' Hostel		
Water tank	1,500	1 per day
RCC Reservoir	5,000	1 per week



Water Usage

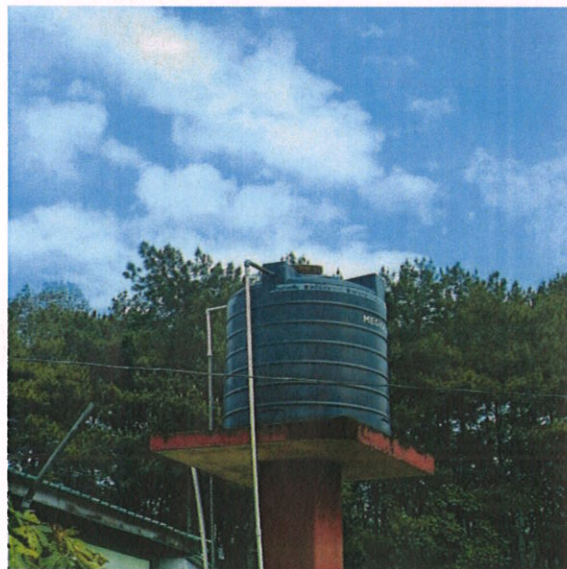
Toilets	
Number of toilets	54
Number of toilet flush	44
Water Filters	
College building	2
Canteen	1
Girls' Hostel	2
Boys' Hostel	1
Wash Basins	
College building	25
Canteen	2
Girls' Hostel	12
Boys' Hostel	12
Taps	
College	30
Library	1
Principals' residence	4
Boys hostel	14
Girls hostel	23
Number of leaking taps and quantity	5 taps, 100 litres per day (approx)
Water Charges paid	138/- per month 1656 /- per year
Total water quantity used	15, 000 litres per day



College Building water tank



RCC Reservoir (Girls' Hostel)



Principal's residence water tank



Water filter



Wash basins



GOVERNMENT OF MEGHALAYA
OFFICE OF THE SUB - DIVISIONAL OFFICER, PHE
NONGSTOIN SUB - DIVISION, NONGSTOIN.

BILL FOR WATER TAX

No. SDO/PHE/NONG/AC-48/2020-21/789 Dated, Nongstoin the, 22nd March 2021.
BILL No:-----

NAME: **The Principal Nongstoin College, Nongpyndeng**
LOCATION: **NONGPYNDENG**
NATURE OF CONNECTION: **15 MM DIA.**
FOR THE PREMISES: **Private Water Connection.**

1	2	3	4
Sl. No	Particulars	Rate	Amount
1	Previous Balance, Balance wef April 2019- March 2020	138/-	Nil
2	Current Amount wef April 2020- March 2021	138/-	₹ 1,656.00
Total:-			₹ 1,656.00

(Rupees, One thousand six hundred fifty six) only.

Note: You are requested to make the payment to the office of the Sub - Divisional Officer, PHE Nongstoin Sub - Division, Nongstoin.

Sub-Divisional Officer, PHE
Nongstoin Sub - Division
Nongstoin

Meghalaya Schedule II Form No. 60 82

GOVERNMENT OF MEGHALAYA

Book No. **6085** Meghalaya Receipt No. (A)

Date **2/4/2021**

Received from **The Principal Nongstoin College, Nongpyndeng**

Sum of Rs. **1656/-** (Rupees One thousand six hundred fifty six only)

On account of **Water for April 2020 - March 2021**

Head to be credited to **0215 of N/S**

Reference to demand of Bill No. and date: -

Signature of Accountant

(if necessary)

Signature or thumb impression of payer in token of having received the receipt

Signature of Sub-Divisional Officer, PHE
Nongstoin Sub-Division
Nongstoin

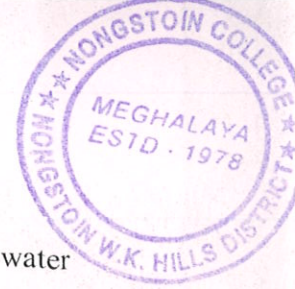
Bill For water Tax

Water audit at Nongstoin College, Nongstoin

The college uses about 15,000 litres of water everyday (approx.). The main source of water is from the public water supply. About 100 litres of water is lost through the leaking pipes and taps. Leakage has to be prevented and various other sources of water needed to be found out as well. Drip irrigation should be practiced in gardens. Water treatment system is installed in the canteen, the amount of used water lost can be prevented.

Existing water management methods installed in the campus:

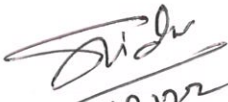
- RCC reservoir of 20,000 litres is installed in the hostels and the college building for water storage.
- Liquid wastes generated from various sources like urinals, bath rooms etc are disposed off into septic tanks and soak pits.
- More greenery has been added consistently in order to improve rain water resources.




Strategies to be adopted for efficient utilization of water:

- Rain water harvesting system should be installed for uninterrupted supply of water around the campus.
- A major preference to the recycling of water may be adopted in the college for an efficient water management.
- Awareness programmes for the management of sustainable water use will be highly efficient in this college.
- Efficient water saving devices should be installed in all toilets. New toilets that are to be installed should have a dual flush system in place.
- Water management systems are to be introduced in the urinals. Some alternatives include spray taps, which save about 80% of water and energy used for hand washing.


Principal
Nongstoin College
Nongstoin


2/3/22


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