

## **Biodiversity conservation and ecosystem restoration**

Yes, Centurion University actively engages with local communities through a range of outreach and educational programmes focused on sustainable land management for agriculture. These include plantation drives, organic farming demonstrations, dragon fruit and stevia cultivation on degraded land, integrated agroforestry models, and composting using vermicompost and Black Soldier Fly units. The university also trains farmers through hands-on sessions, field visits to farmers and rural internships (RAWE) to students, promoting practices like crop rotation, intercropping, and soil conservation. These initiatives aim to restore land productivity, enhance biodiversity, and build community capacity for sustainable agriculture.

The university's apiculture unit has made significant progress in conserving bee populations and enhancing honey production. With 28 bee boxes installed on campus, active colonies are carefully monitored and maintained through various practices such as seasonal floral planting, hive hygiene, ant control, and supplemental feeding during nectar scarcity. Educational demonstrations for local schools and visitors promote awareness of beekeeping and the vital role of bees in ecosystem health and agriculture.

- Conducts plantation drives and promotes organic farming practices.
- Demonstrates dragon fruit, stevia cultivation, and integrated agroforestry on degraded land.
- Implements vermicompost and Black Soldier Fly composting for organic waste management.
- Provides hands-on farmer training, field visits, and RAWE-based rural internships for students.
- Promotes crop rotation, intercropping, soil conservation, and biodiversity enhancement techniques.
- Maintains an apiculture (beekeeping) unit with 28 bee boxes to conserve bees and increase honey production.
- Ensures bee health through floral plantation, hive hygiene, ant control, and supplementary feeding.
- Offers educational beekeeping demonstrations to schools and visitors to raise awareness on the role of bees in agriculture and ecosystem health.

### **1. Bees' conservation:**

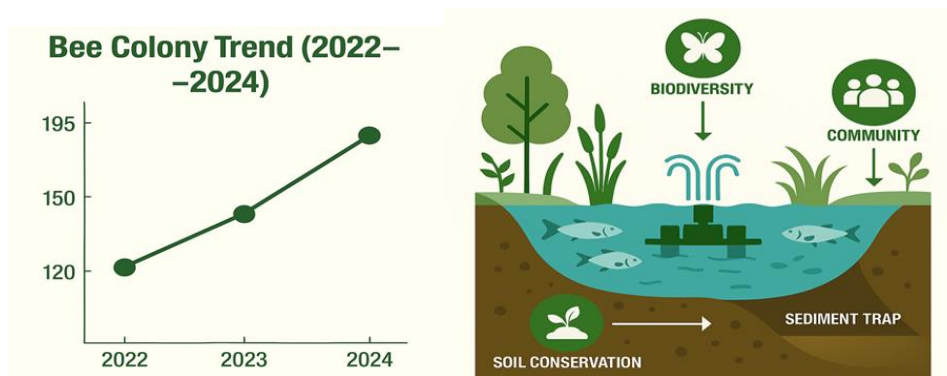
A variety of conservation methods were implemented to support healthy bee populations and enhance productivity.

### **Beekeeping Management Practices**

- Seasonal crops like pumpkin, sweet corn, and sunflower were planted to ensure continuous and diverse pollen and nectar for bees.
- Regular hive cleaning was carried out to maintain hygiene and prevent diseases.
- Ant wells were filled with water to protect bee colonies from ant infestations.
- Sugar feeding was provided during low-nectar periods to support bee energy needs.
- Brood data was recorded regularly to monitor colony health and growth.
- Permanent bee-friendly floral species were planted to create a sustainable, year-round forage base for bees.

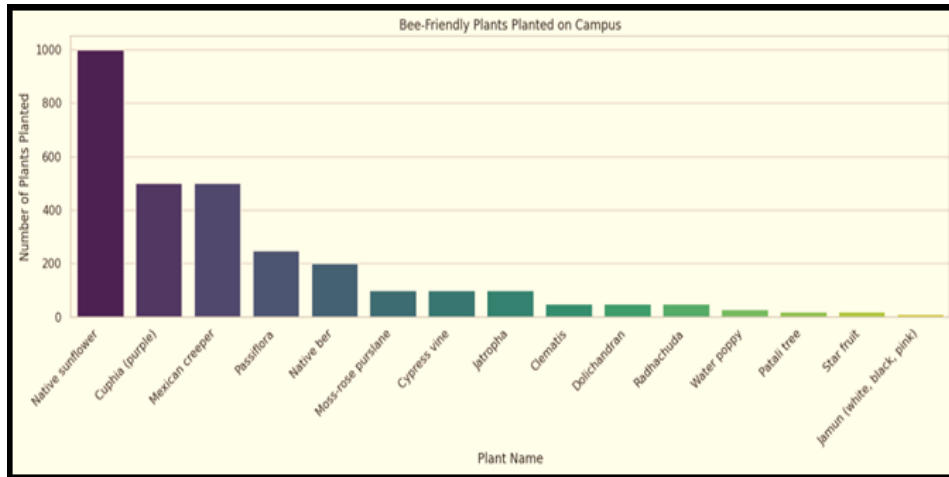


**Figure 1: Cleaning of Bee boxes and brood data collection**



## 2. Enhancement of biodiversity through plantation drive:

To support bee-friendly flora and overall campus biodiversity, Centurion University has planted a variety of species including Cuphia (purple), Mexican creeper, native sunflowers, Passiflora, Cypress vine, moss-rose purslane, Jatropha, Clematis, Jamun (multiple varieties), Radhachuda, Patali tree, water poppy, Dolichandran, star fruit, and native ber. These plants provide continuous forage for pollinators and contribute to a balanced ecosystem on campus.



**Figure 2: Graph showing New plants have been planted on campus to enhance biodiversity**

### **🌱 Organic Farming Practices:**

Through experiential learning and rural outreach, students at Centurion University actively promote organic farming techniques. They assist farmers in preparing organic inputs like Panchagavya and Jeevamrita, demonstrate the use of vermicompost and Azolla, and encourage sustainable pest management practices. These efforts enhance soil health, reduce chemical dependency, and support sustainable agricultural productivity in surrounding communities.



**Figure 3: vermicompost unit with different organic treatments to improve soil health**

### **🌱 Flora and Fauna diversity on Campus:**

Centurion University is committed to preserving local flora and fauna by maintaining green spaces, supporting biodiversity conservation projects, and protecting natural habitats on campus. The institution's efforts include soil health monitoring, habitat restoration through plantation drives, and awareness programs that emphasize ecological balance. These initiatives contribute to environmental sustainability and enrich the educational environment for students and researchers alike.

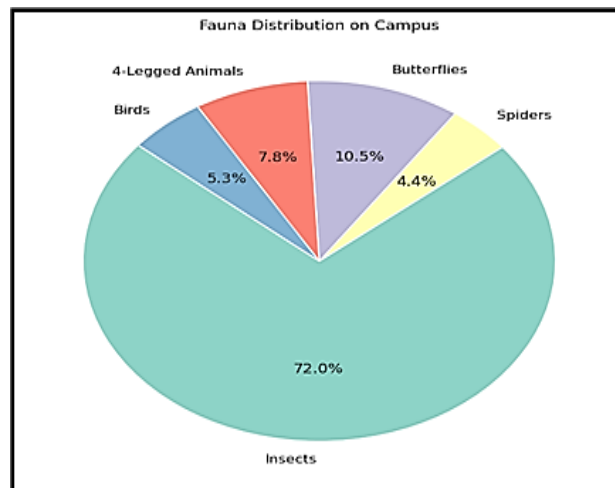
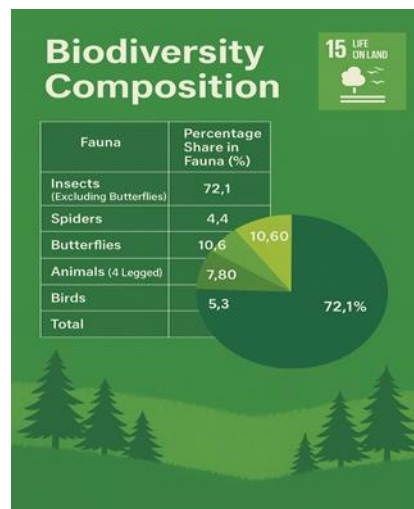
### **🌱 The fauna Diversity in the campus:**

The fauna diversity on the CUTM campus is predominantly composed of insects, which constitute 72.1% of the total fauna, amounting to 396 individuals. Spiders follow with 4.4%, totalling 24 individuals, while butterflies represent 10.6% with 58 individuals. Animals with

four legs account for 7.8% (43 individuals), and birds make up 5.3% with 29 individuals. Collectively, these groups contribute to a total of 550 recorded fauna, offering a rich tapestry of biodiversity that supports various ecological functions such as pollination, pest control, and nutrient cycling.

**Table 1: List of Fauna diversity in the campus**

Fauna	Count	Percentage Share in Fauna(%)
<b>Insects (Excluding Butterflies)</b>	396	72.1
<b>Spiders</b>	24	4.4
<b>Butterflies</b>	58	10.6
<b>Animals (4 Legged)</b>	43	7.8
<b>Birds</b>	29	5.3
<b>Total</b>	550	100



**Figure 4: Pie chart shows the Fauna distribution**

**Table 2: Birds diversity in the campuses**

Common Name	Scientific Name	Family	Count	Ecological Role	Conservation status	Measure	Value
<b>African Dove</b>	<i>Streptopelia roseogrisea</i>	Columbidae	6	Seed Disperser	LC	S	43
<b>Cockatiel</b>	<i>Nymphicus hollandicus</i>	Cacatuidae	8	Granivore	LC	D	0.382
<b>Lovebirds</b>	<i>Agapornis spp.</i>	Psittaculidae	10	Granivore	LC	1 - D	0.618
<b>Finches</b>	<i>Taeniopygia guttata</i>	Estrildidae	6	Granivore	LC	1/D	2.618
<b>Conure</b>	<i>Eupsittula spp.</i>	Psittacidae	4	Frugivore	LC	H	1.824
<b>Budgerigar</b>	<i>Melopsittacus undulatus</i>	Psittacidae	15	Granivore	LC	E	0.487
<b>White Pekin Duck</b>	<i>Anas platyrhynchos domestica</i>	Anatidae	15	Omnivore	Domesticated		
<b>Indian Runner Duck</b>	<i>Anas platyrhynchos domestica</i>	Anatidae	20	Omnivore	Domesticated		
<b>Khaki Campbell Duck</b>	<i>Anas platyrhynchos domestica</i>	Anatidae	18	Omnivore	Domesticated		
<b>Muscovy Duck</b>	<i>Cairina moschata</i>	Anatidae	7	Omnivore	LC		
<b>Red-Eared Slider</b>	<i>Trachemys scripta elegans</i>	Emydidae	12	Omnivore	LC		
<b>Magur</b>	<i>Clarias batrachus</i>	Clariidae	700	Scavenger	NT		
<b>Singhi</b>	<i>Heteropneustes fossilis</i>	Heteropneustidae	1000	Scavenger	LC		
<b>Koi</b>	<i>Cyprinus rubrofuscus</i>	Ciprinidae	600	Omnivore	Domesticated		
<b>New Zealand White Rabbit</b>	<i>Oryctolagus cuniculus</i>	Leporidae	4	Herbivore	Domesticated		
<b>Giant Chinchilla Rabbit</b>	<i>Oryctolagus cuniculus</i>	Leporidae	1	Herbivore	Domesticated		
<b>Dutch Rabbit</b>	<i>Oryctolagus cuniculus</i>	Leporidae	2	Herbivore	Domesticated		
<b>Polish Rabbit</b>	<i>Oryctolagus cuniculus</i>	Leporidae	2	Herbivore	Domesticated		
<b>Guinea Pig</b>	<i>Cavia</i>	Caviidae	5	Herbivore	Domesticated		

	<i>porcellus</i>						
<b>Goose</b>	<i>Anser anser domesticus</i>	Anatidae	12	Herbivore	Domesticated		
<b>Aseel Chicken</b>	<i>Gallus gallus domesticus</i>	Phasianidae	20	Omnivore	Domesticated		
<b>Kaveri Chicken</b>	<i>Gallus gallus domesticus</i>	Phasianidae	30	Omnivore	Domesticated		
<b>Silkie Chicken</b>	<i>Gallus gallus domesticus</i>	Phasianidae	5	Omnivore	Domesticated		
<b>White Leghorn Chicken</b>	<i>Gallus gallus domesticus</i>	Phasianidae	10	Omnivore	Domesticated		
<b>Rhode Island Red Chicken</b>	<i>Gallus gallus domesticus</i>	Phasianidae	20	Omnivore	Domesticated		
<b>Sonali Chicken</b>	<i>Gallus gallus domesticus</i>	Phasianidae	20	Omnivore	Domesticated		
<b>Donaery Chicken</b>	<i>Gallus gallus domesticus</i>	Phasianidae	20	Omnivore	Domesticated		
<b>Chittagong Chicken</b>	<i>Gallus gallus domesticus</i>	Phasianidae	30	Omnivore	Domesticated		
<b>Aseel Black Chicken</b>	<i>Gallus gallus domesticus</i>	Phasianidae	30	Omnivore	Domesticated		
<b>Turkey</b>	<i>Meleagris gallopavo</i>	Phasianidae	6	Omnivore	Domesticated		
<b>Guinea Fowl</b>	<i>Numida meleagris</i>	Numididae	6	Omnivore	LC		
<b>Japanese Quail</b>	<i>Coturnix japonica</i>	Phasianide	50	Granivore	LC		
<b>Hedgehog</b>	<i>Atelerix albiventris</i>	Erinaceidae	1	Insectivore	LC		
<b>Blue Iguana</b>	<i>Cyclura lewisi</i>	Iguanidae	1	Herbivore	EN		
<b>Labrador</b>	<i>Canis lupus familiaris</i>	Canidae	2	Omnivore	Domesticated		
<b>Turtle</b>	<i>Trachemys scripta</i>	Emydidae	3	Omnivor	LC		

To protect and restore house sparrow habitats, the university has undertaken several conservation initiatives across the campus.

- ✚ Nest boxes and bird feeders have been installed in green zones, gardens, and near academic buildings to provide safe nesting and feeding spaces.
- ✚ Dedicated water stations and shaded perching areas have been created to support sparrows, especially during summer.

🌱 The campus promotes native tree and shrub planting to enhance insect availability and shelter, while pesticide use has been minimized to maintain a healthy ecosystem.

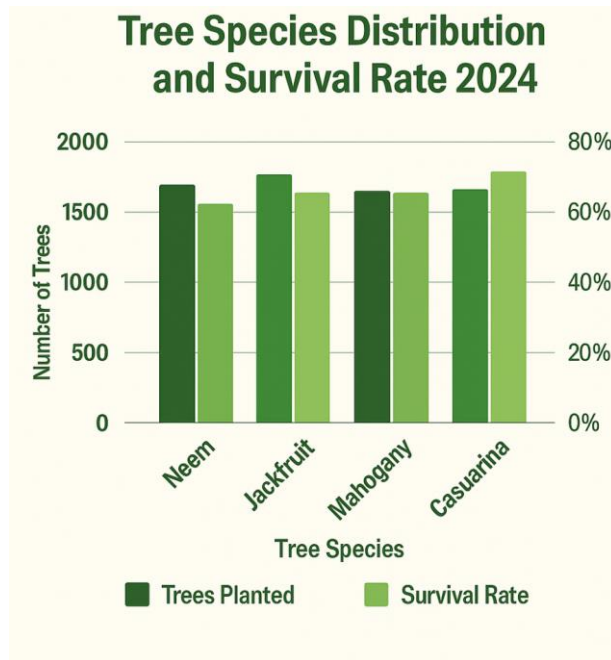
**Table 3: List of Birds species**

SI No.	Common Name	Scientific Name	Family	Count	Ecological Role	Conservation Status	Measure	Value
1	House Sparrow	<i>Passer domesticus</i>	Passeridae	120	Seed disperser (Urban adaptor)	LC	S	29
2	Common Myna	<i>Acridotheres tristis</i>	Sturnidae	95	Insect controller (Opportunistic feeder)	LC	D	0.092
3	Rock Pigeon	<i>Columba livia</i>	Columbidae	200	Seed disperser (Urban adaptor)	LC	1 - D	0.908
4	Asian Koel	<i>Eudynamys scolopacea</i>	Cuculidae	35	Frugivore (Brood parasite)	LC	1/D	10.87
5	Red-vented Bulbul	<i>Pycnonotus cafer</i>	Pycnonotidae	80	Frugivore (Seed disperser)	LC	H	2.384
6	Common Tailorbird	<i>Orthotomus sutorius</i>	Cisticolidae	25	Insectivore (Pest controller)	LC	E	0.709
7	Indian Peafowl	<i>Pavo cristatus</i>	Phasianidae	200	Omnivore (Cultural significance)	LC		
8	African Dove	<i>Streptopelia roseogrisea</i>	Columbidae	6	Seed Disperser	LC		
9	Cockatiel	<i>Nymphicus hollandicus</i>	Cacatuidae	8	Granivore	LC		
10	Lovebirds	<i>Agapornis spp.</i>	Psittaculidae	10	Granivore	LC		
11	Finches	<i>Taeniopygia guttata</i>	Estrildidae	6	Granivore	LC		
12	Conure	<i>Eupsittula spp.</i>	Psittacidae	4	Frugivore	LC		
13	Budgerigar	<i>Melopsittacus undulatus</i>	Psittacidae	15	Granivore	LC		
14	White Pekin Duck	<i>Anas platyrhynchos domestica</i>	Anatidae	15	Omnivore	Domesticated		
15	Indian Runner Duck	<i>Anas platyrhynchos domestica</i>	Anatidae	20	Omnivore	Domesticated		
16	Khaki Campbell Duck	<i>Anas platyrhynchos domestica</i>	Anatidae	18	Omnivore	Domesticated		
17	Muscovy Duck	<i>Cairina moschata</i>	Anatidae	7	Omnivore	LC		

18	Aseel Chicken	<i>Gallus gallus domesticus</i>	Phasianidae	20	Omnivore	Domesticated
19	Kaveri Chicken	<i>Gallus gallus domesticus</i>	Phasianidae	30	Omnivore	Domesticated
20	Silkie Chicken	<i>Gallus gallus domesticus</i>	Phasianidae	5	Omnivore	Domesticated
21	White Leghorn Chicken	<i>Gallus gallus domesticus</i>	Phasianidae	10	Omnivore	Domesticated
22	Rhode Island Red Chicken	<i>Gallus gallus domesticus</i>	Phasianidae	20	Omnivore	Domesticated
23	Sonali Chicken	<i>Gallus gallus domesticus</i>	Phasianidae	20	Omnivore	Domesticated
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26	Aseel Black Chicken	<i>Gallus gallus domesticus</i>	Phasianidae	30	Omnivore	Domesticated
27	Turkey	<i>Meleagris gallopavo</i>	Phasianidae	6	Omnivore	Domesticated
28	Guinea Fowl	<i>Numida meleagris</i>	Numididae	6	Omnivore	LC
29	Japanese Quail	<i>Coturnix japonica</i>	Phasianidae	50	Granivore	LC

#### Afforestation and Micro-Forest Development

- 3,090 saplings planted in 2024 (80+ species across 5 campuses).
- Average survival  $\approx$  85 %.
- Species richness index ( $H' = 3.74$ ).







#### 🌱 Soil Health and Land Restoration

- 120 soil samples tested; mean pH  $\uparrow$  6.2  $\rightarrow$  7.0; SOC  $\uparrow$  0.48  $\rightarrow$  0.57 (+18 %).
- NPK balance improved through organic compost integration.
- Soil Health Cards distributed to 120 farmers across Odisha and Andhra Pradesh.

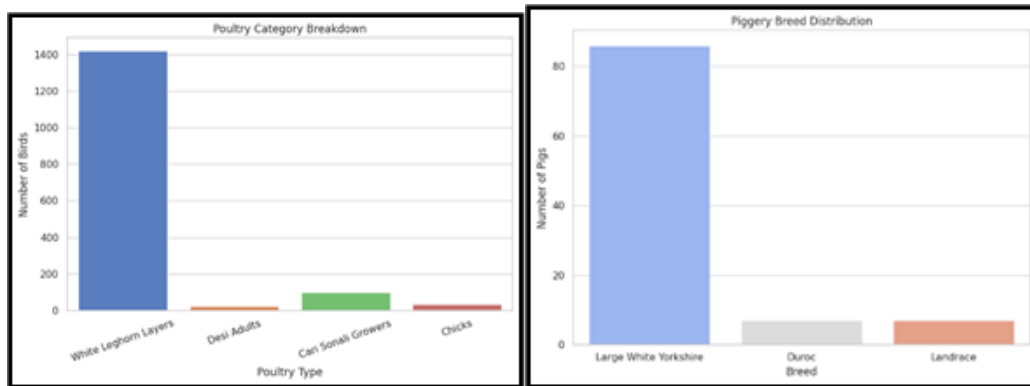
Parameter	2023 Value	2024 Value	% Change	Ecological Outcome
<b>Soil Organic Carbon (%)</b>	0.45	0.72	+60%	Enhanced soil fertility and microbial activity
<b>Available Nitrogen (kg/ha)</b>	250	310	+24%	Improved plant growth and productivity
<b>Available Phosphorus (kg/ha)</b>	18	28	+55%	Better root development and yield
<b>Available Potassium (kg/ha)</b>	220	295	+34%	Improved crop resilience and stress tolerance
<b>pH Range</b>	6.4 – 6.8	6.5 – 6.9	–	Stable soil condition
<b>Bulk Density (g/cm<sup>3</sup>)</b>	1.42	1.36	-4%	Enhanced soil porosity and aeration
<b>Soil Moisture</b>	22	28	+27%	Better drought resistance and

Retention (%)			infiltration capacity
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Soil Health Metrics (2023–2024)			
Parameter	2023	2024	% Change
 pH	5.8	6.4	+10%
 Organic Carbon	0.67%	0.72%	+7%
 Available Nitrogen	238 kg/ha	254 kg/ha	+7%
 Soil Pest Incidence	9%	7%	- 2%

**🌱 Livestock farm complex :**

The livestock farm complex comprises a diversified unit with cattle & buffalo, sheep & goat, piggery and poultry unit.



**Figure 5: Shows the Poultry and piggery distribution**

**Table 4: Shows the number of Livestock present in the campus**

Species	Breed/Type	Number of Animals
<b>Goat</b>	Ganjam	12
<b>Sheep</b>	Ganjam	48
	Nellore	76
	Total Sheep and Goat	136
<b>Cattle</b>	Khariar	7
	Binjarpuri	11
	Holstein Friesian (HF)	11
	Crossbred HF (CBHF)	22
	Crossbred Jersey (CBJY)	6

	Gir	1
<b>Buffalo</b>	Gradded Murrah	6
	Total Cattle and buffalo	64
<b>Poultry</b>	White Leghorn (BV-300) – Layers	1,420
	Desi Chicken (Adults)	24
	Cari Sonali (Growers)	99
	Cari Sonali Chicks	34
	Total Poultry	1577
<b>Pig</b>	Large White Yorkshire	86 (incl. piglets)
	Duroc	7
	Landrace	7
	Total Pigs	100
	Total Livestock and Poultry	1877



**Figure 6: Shows the glimpses of livestock Farm**

#### **✚ Floral Diversity in the Paralakhemundi Campus:**

The campus is home to over 80 different tree species, including both common and rare varieties. In total, there are 3,090 individual trees, comprising approximately 1,043 mango trees, 861 teak, 488 Acacia mangium, 274 weeping figs (*Ficus benjamina*), and 150 coconut palms (*Cocos nucifera*). Among these are several rare and threatened species, such as Red Sandalwood (endangered), Sandalwood (vulnerable), and Bael (near threatened). This rich assemblage reflects both biodiversity and conservation importance, combining large populations of dominant species with the presence of threatened varieties that add ecological and botanical value. The Shannon Index falls roughly in the range of 2.0 to 3.0. In well-balanced natural forests, values around 2.5 or above are common. This reflects both richness (many species) and a degree of evenness, despite dominance by a few species.

**Table 5: List of tree species present in the campus**

Sl.No	Common name	Scientific name	IUCN status	Family	Number of individuals
1	Fig	<i>Ficus carica</i>	LC	Moraceae	5
2	Royal Ponciana	<i>Delonix regia</i>	LC	Fabaceae	25
3	Devil tree	<i>Alstonia scholaris</i>	LC	Apocynaceae	242
4	Palash	<i>Butea monosperma</i>	LC	Fabaceae	6
5	Karanja tree	<i>Millettia pinnata</i>	LC	Fabaceae	77
6	Karaka tree	<i>Canthium coromandelicum</i>	NOT ASSESSE	Corynocarpaceae	5
7	Neem tree	<i>Azadirachta indica</i>	LC	Meliaceae	71
8	Weeping fig	<i>Ficus benjamina</i>	LC	Moraceae	274
9	Pride of India	<i>Lagerstroemia speciosa</i>	NOT ASSESSE	Lythraceae	11
10	Kagzi lime	<i>Citrus aurantifolia</i>	NOT ASSESSE	Rutaceae	37
11	Yellow Elder plant	<i>Tecoma stans</i>	LC	Bignoniaceae	8
12	Pine	<i>Pinus spp. L.</i>	LC	Pinaceae	2
13	Debdaru	<i>Monoon longifolium</i>	NOT ASSESSE	Annonaceae	133
14	Royal palm	<i>Dypsis lutescens</i>	LC	Arecaceae	48
15	Singapore gravevard flower	<i>Plumeria obtuse</i>	LC	Apocynaceae	49
16	Yellow flame tree / copper pod tree	<i>Peltophorum pterocarpum</i>	NOT ASSESSE	Fabaceae	3
17	Cashew nut	<i>Anacardium occidentale</i>	LC	Anacardeaceae	43
18	Mango	<i>Mangifera indica</i>		Anacardeaceae	1043
19	Teak tree	<i>Tectona grandis</i>	NOT ASSESSE	Lamiaceae	861
20	Custard apple	<i>Annona squamosa</i>	LC	Annonaceae	13
21	Indian cherry	<i>Frangula caroliniana</i>	LC	Rhamnaceae	29
22	Coconut	<i>Cocos nucifera</i>	NOT ASSESSE	Arecaceae	150
23	Guava	<i>Psidium guajava</i>	LC	Myrtaceae	104
24	Mangium	<i>Acacia mangium</i>	NOT ASSESSE	Fabaceae	488
25	Cadamba	<i>Neolamarckia cadamba</i>	NOT ASSESSE	Rubiaceae	25
26	Jack fruit	<i>Artocarpus heterophyllus</i>	NOT ASSESSE	Moraceae	82
27	Tasmanian blue gum	<i>Eucalyptus globulus</i>	LC	Myrtaceae	19
28	Black tea tree	<i>Melaleuca bracteate</i>	DATA DEFICIE	Myrtaceae	5
29	Thuja	<i>Thuja occidentalis L.</i>	LC	Cupressaceae	58
30	Oil nut	<i>Calophyllum inophyllum</i>	LC	Euphorbiaceae	31
31	Lemon	<i>Citrus limon</i>	NOT ASSESSE	Rutaceae	16

32	Sapota	<i>Manilkara zapota</i>	LC	Sapotaceae	2
33	Sweet neem tree / curry leaf	<i>Murraya koenigii</i>	LC	Rutaceae	21
34	Gamhar	<i>Gmelina arborea</i>	LC	Lamiaceae	1
35	Kanchana	<i>Bauhinia variegata</i>	LC	Fabaceae	2
36	Sesendok	<i>Endospermum diadenum</i>	LC	Euphorbiaceae	1
37	Fiddle leaf plumeria	<i>Plumeria pudica</i>	LC	Apocynaceae	1
38	Jamun	<i>Syzygium cumini</i>	LC	Myrtaceae	2
39	China berry	<i>Melia azedarach</i>	LC	Meliaceae	1
40	Satin wood	<i>Chloroxylon swietenia</i>	VULNERABLE	Rutaceae	1
41	Indian tulip tree	<i>Thespesia populnea</i>	LC	Malvaceae	2
42	Osier	<i>Salix sp.</i>	LC	Salicaceae	1
43	Weeping mulberry	<i>Morus alba</i>	NOT ASSESSE	Moraceae	2
44	Khejri	<i>Prosopis cineraria</i>	NOT ASSESSE	Fabaceae	1
45	Indian goose berry	<i>Phyllanthus emblica</i>	LC	Phyllanthaceae	4
46	Bael	<i>Aegle marmelos</i>	NEAR THREAT	Rutaceae	7
47	Big leaf mahogany	<i>Swietenia macrophylla</i>	VULNERABLE	Meliaceae	1
48	Henna	<i>Lawsonia inermis</i>	LC	Lythraceae	2
49	English wal nut	<i>Juglans regia</i>	LC	Juglandaceae	1
50	Sandal wood	<i>Santalum album</i>	VULNERABLE	Santalaceae	1
51	Scarlet bush	<i>Hamelia patens</i>	LC	Rubiaceae	3
52	Japanese wingnut	<i>Pterocarya rhoifolia</i>	LC	Fabaceae	1
53	Lipstick tree	<i>Bixa Orellana</i>	LC	Bixaceae	1
54	Chestnut leaved oak	<i>Quercus castaneifolia</i>	NEAR THREAT	Fagaceae	1
55	Sausage Tree	<i>Kigelia Africana</i>	LC	Bignoniaceae	1
56	Acacia	<i>Acacia auriculiforms</i>	LC	Fabaceae	72
57	orchid tree	<i>Bauhinia purpurea</i>	LC	Fabaceae	1
58	Peepal	<i>Ficus religiosa</i>	NOT ASSESSE	Moraceae	4
59	Almond	<i>Prunus dulcis</i>	NOT ASSESSE	Rosaceae	5
60	Banyan tree	<i>Ficus benghalensis</i>	NOT ASSESSE	Moraceae	5
61	Palmyra palm/ Doub palm	<i>Borassus flabellifer</i>	NOT ASSESSE	Arecaceae	12
62	Shirisha	<i>Albizia lebbeck</i>	LC	Fabaceae	15
63	Rubber fig	<i>Ficus elastica</i>	NOT ASSESSE	Moraceae	1

64	Red stem fig	<i>Ficus variegata</i>	LC	Moraceae	3
65	Red sandel wood	<i>Pterocarpus santalinus</i>	ENDANGERED	Fabaceae	3
66	Indian plum/ber	<i>Ziziphus mauritiana</i>	LC	Rhamnaceae	4
67	Bread Fruit	<i>Artocarpus altilis</i>	NOT ASSESSED	Moraceae	2
68	Pomelo	<i>Citrus maxima</i>	LC	Rutaceae	6
69	Spinous kino tree	<i>Bridelia retusa</i>	LC	Phyllanthaceae	5
70	Karra	<i>Cleistanthus collinus</i>	VULNERABLE	Phyllanthaceae	3
71	Rain tree	<i>Samanea saman</i>	LC	Fabaceae	15
72	Shisham	<i>Dalbergia sissoo</i>	LC	Fabaceae	12
73	Long - leaved wattle	<i>Acacia longifolia</i>	LC	Fabaceae	1
74	Carambola	<i>Averrhoa carambola</i>	NOT ASSESSED	Oxalidaceae	1
75	Indian trump tree	<i>Oroxylum indicum</i>	NOT ASSESSED	Bignoniaceae	1
76	Date palm	<i>Phoenix dactylifera</i>	LC	Arecaceae	3
77	Ritha	<i>Sapindus mukorossi</i>	LC	Sapindaceae	1
78	Chinese privet	<i>Ligustrum sinense</i>	NOT ASSESSED	Oleaceae	1
79	Black cherry	<i>Prunus serotina</i>	NOT ASSESSED	Rosaceae	1
80	Spanish cherry	<i>Mimusops elengi</i>	LC	Sapotaceae	1

**Table 6: List of medicinal and aromatic plants**

Serial No	Common name	Botanical Name	Family
1	Bharangi/ Chingari	<i>Clerodendrum indicum</i>	Verbenaceae
2	Allspice	<i>Pimenta dioica</i>	Myrtaceae
3	Cape Jasmine	<i>Gardenia jasminoides</i>	Rubiaceae
4	English Walnut	<i>Juglans regia</i>	Juglandaceae
5	Purple Allamanda	<i>Allamanda purpurea</i>	Apocynaceae
6	Red Lucky seed	<i>Adenanthera pavonina</i>	Fabaceae
7	Phalsa	<i>Grewia asiatica</i>	Malvaceae
8	Orange jasmine/ Kamini	<i>Murraya exotica</i>	Rutaceae
9	Sausage tree	<i>Kigelia africana</i>	Bignoniaceae
10	Indian sandalwood	<i>Santalum album</i>	Santalaceae
11	Fiddle leaf plumeria	<i>Plumeria pudica</i>	Apocynaceae
12	Wood apple	<i>Limonia acidissima</i>	Rutaceae

13	Putranjiva	<i>Putranjiva roxburghii</i>	Putranjivaceae
14	chestnut-leaved oak	<i>Quercus cestaneifolia</i>	Fagaceae
15	Lipstick tree	<i>Bixa ollerana</i>	Bixaceae
16	Chinese privet	<i>Ligustrum sinense</i>	Oleaceae
17	Henna	<i>Lawsonia inermis</i>	Lythraceae
18	Gamhar	<i>Gmelina arborea</i>	Lamiaceae
19	Indian Almond	<i>Terminalia catappa</i>	Combretaceae
20	Jamun	<i>Syzigium sp</i>	Myrtaceae
21	Teak	<i>Tectona grandis</i>	Lamiaceae
22	Sweet neem/ Indian lilac	<i>Melia azaderach</i>	Meliaceae
23	Indian trumpet tree	<i>Oroxylum indicum</i>	Bignoniaceae
24	African tulip tree	<i>Spathodea campanulata</i>	Bignoniaceae
25	Pride of India	<i>Lagerstroemia flos- reginae</i>	Lythraceae
26	Bottlebrush	<i>Callistemon lanceolatus</i>	Myrtaceae
27	Palash/ Flame of the forest	<i>Butea monosperma</i>	Fabaceae
28	Scarlet bush	<i>Hamelia patens</i>	Rubiaceae
29	Japanese wingnut	<i>Pterocarya rhoifolia</i>	Juglandaceae
30	Smooth sumac	<i>Rhus glabra</i>	Anacardiaceae
31	Big-leaf mahogany	<i>Swietenia macrophylla</i>	Meliaceae
32	Nux vomica	<i>Strychnos nux-vomica</i>	Loganiaceae
33	Black cherry	<i>Prunus serotina</i>	Rosaceae
34	Ceylon cinnamon	<i>Cinnamomum verum</i>	Lauraceae
35	Blue porterweed/ Worryvine	<i>Stachytarpheta jamaicensis</i>	Verbenaceae
36	Parijat	<i>Nyctanthes arbor-tristis</i>	Oleaceae
37	Texas sage	<i>Leucophyllum frutescens</i>	Scrophulariaceae
38	Indian gooseberry	<i>Phyllanthus emblica</i>	Phyllanthaceae
39	Bael	<i>Aegle marmelos</i>	Rutaceae
40	Florida fiddlewood	<i>Citharexylum spinosum</i>	Verbenaceae
41	Bluebellvine	<i>Clitoria ternatea</i>	Fabaceae
42	Elephant apple	<i>Dillenia indica</i>	Dilleniaceae
43	Peacock flower	<i>Caesalpinia pulcherrima</i>	Fabaceae

44	Ritha	<i>Sapindus mukorossi</i>	Sapindaceae
45	Red sandalwood	<i>Pterocarpus santalinus</i>	Fabaceae
46	Sapota	<i>Manilkara zapota</i>	Sapotaceae
47	Osier	<i>Salix sp</i>	Salicaceae
48	Long-leaved wattle	<i>Acacia longifolia</i>	Fabaceae
49	California sycamore	<i>Plantanus racemosa</i>	Platanaceae
50	Carambola/ Star fruit	<i>Averrhoa carambola</i>	Oxalidaceae
51	Soursop	<i>Annona reticulata</i>	Annonaceae
52	Sesendok	<i>Endospermum diadenum</i>	Euphorbiaceae
53	Rayan/ Khirmi	<i>Manilkara hexandra</i>	Sapotaceae
54	Spanish cherry	<i>Mimusops elengii</i>	Sapotaceae
55	red cotton tree	<i>Bombax ceiba</i>	Malvaceae
56	Ghaf/ Khejri	<i>Psoropis cineraria</i>	Fabaceae
57	Indian tulip tree	<i>Thespesia populnea</i>	Malvaceae
58	Lemon grass	<i>Cymbopogon citratus</i>	Poaceae
59	Black ginger	<i>Kaempferia parviflora</i>	Zingiberaceae
60	Date palm	<i>Phoenix sylvestris</i>	Arecaceae
61	Pomegranate	<i>Punica granatum</i>	Lythraceae
62	Nisinda	<i>Vitex negundo</i>	Lamiaceae
63	Kanchan	<i>Bauhinia variegata</i>	Fabaceae
64	Chekurmanis/ Multi vitamin green	<i>Sauropus androgynus</i>	Phyllanthaceae
65	Asparagus	<i>Asparagus officinalis</i>	Asparagaceae
66	Vetiver/ Khus-Khus	<i>Chrysopogon zizanioides</i>	Poaceae
67	Cotton	<i>Gossypium hirsutum</i>	Malvaceae
68	Jatropha	<i>Jatropha curcas</i>	Euphorbiaceae
69	Malabar nut/ Vasaka	<i>Justicia adhatoda</i>	Acanthaceae
70	Tulasi/ Basil	<i>Ocimum sanctum</i>	Lamiaceae
71	Krishna Tulasi	<i>Ocimum tenuiflorum</i>	Lamiaceae
72	Apple of Sodom	<i>Calotropis procera</i>	Apocynaceae
73	Elephant creeper	<i>Argyreia nervosa</i>	Convolvulaceae
74	Shell ginger	<i>Alpinia zerumbet</i>	Zingiberaceae

75	Whiteywood	<i>Melicytus ramiflorus</i>	Violaceae
76	Frémont's cottonwood	<i>Populus fremontii</i>	Salicaceae
77	Toothed spurge	<i>Euphorbia dentata</i>	Euphorbiaceae
78	China rose	<i>Hibiscus rosa-sinensis</i>	Malvaceae
79	Pandan leaf	<i>Pandan amaryllifolius</i>	Pandanaceae
80	Touch me not	<i>Mimosa pudica</i>	Fabaceae

#### ✚ Plant diversity in Bhubaneswar campus:

**Table 7: List of Plant present in Bhubaneswar Campus**

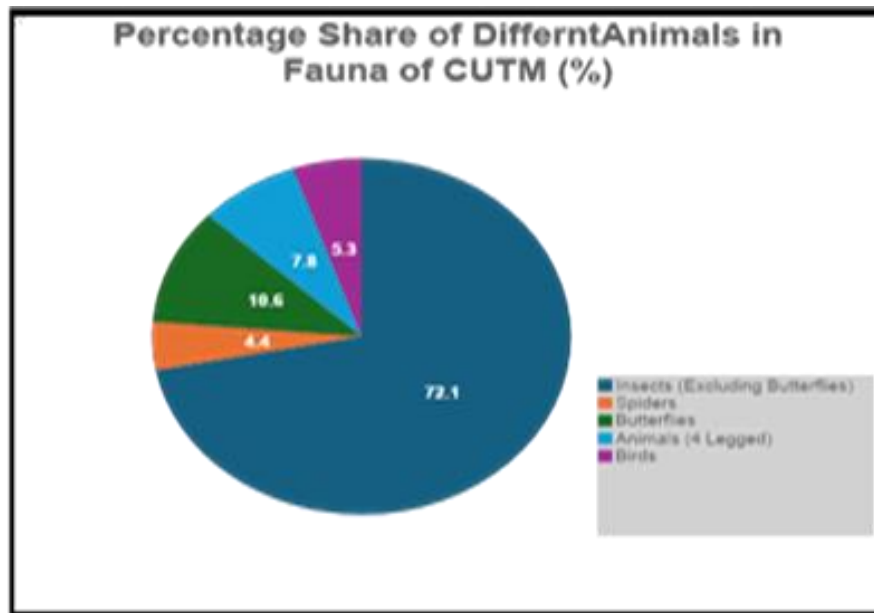
No.	Plant Name	Quantity
1	Mango ( <i>Mangifera indica</i> )	1720
2	Pomelo ( <i>Citrus maxima</i> )	100
3	Jatropha ( <i>Jatropha curcas</i> )	45
4	Jackfruit ( <i>Artocarpus heterophyllus</i> )	15
5	Assam Tea ( <i>Camellia sinensis</i> )	14
6	Arabica Coffee ( <i>Coffea arabica</i> )	350
7	Cocoa ( <i>Theobroma cacao</i> )	50
8	Jamaica cherry ( <i>Muntingia calabura</i> )	15
9	Firebush ( <i>Hamelia patens</i> )	140
10	Pineapple ( <i>Ananas comosus</i> )	100
11	Turmeric ( <i>Curcuma longa</i> )	3500
12	Ginger ( <i>Zingiber officinale</i> )	250
13	Jamun ( <i>Syzygium cumini</i> )	35
14	Karanja ( <i>Millettia pinnata</i> )	25
15	Bottle Brush ( <i>Melaleuca viminalis</i> )	2
16	Cannonball Tree ( <i>Couroupita guianensis</i> )	6
17	Wood Apple ( <i>Aegle marmelos</i> )	6
18	Kadamba ( <i>Neolamarckia cadamba</i> )	4
19	<i>Terminalia chebula</i>	5
20	Neem Tree	40
21	Curry Leaf Tree	30
22	Casuarina	10
23	Ginger (duplicate)	180
24	Wild Date Palm	3
25	Harida	35
26	Bahada	22
27	Indian Ber	25
28	Sal	3
29	Amla	6
30	Patali Tree	20
31	Kewda ( <i>Screw Pine</i> )	70
32	Star Fruit	5
33	Wild Orchid	50

34	Hybrid Flowering Orchid	1500
35	Hog Plum	5
36	Chinese Ixora	30
37	Sugarcane	100
38	Arecanut Palm	200
39	Coconut	200
40	Gulmohar	5
41	<i>Monoon longifolium</i>	60
42	<i>Mimusops elengi</i>	40
43	Garlic Vine	100
44	Bitter Vine ( <i>Mikania micrantha</i> )	60
45	Trumpet Vine	150
46	Bleeding Heart	90
47	Mandevilla	30
48	Blue Skyflower ( <i>Thunbergia grandiflora</i> )	35
49	Mexican Creeper ( <i>Antigonon leptopus</i> )	12
50	Creeping Fig ( <i>Ficus pumila</i> )	100
51	Screwpine ( <i>Pandanus tectorius</i> )	150
52	Spider Plant ( <i>Chlorophytum comosum</i> )	200
53	Golden Milky ( <i>Dracaena</i> )	200
54	Roheo ( <i>Tradescantia spathacea</i> )	500
55	Striped Wandering Jew ( <i>Tradescantia zebrina</i> )	300
56	Joyweed ( <i>Alternanthera</i> )	1000
57	Alocasia ( <i>Alocasia macrorrhizos</i> )	50
58	Peace Lily ( <i>Spathiphyllum wallisii</i> )	100
59	Croton ( <i>Codiaeum variegatum</i> )	40
60	Jasmine ( <i>Jasminum officinale</i> )	150
61	Orange Jasmine ( <i>Murraya paniculata</i> )	300
62	Snake Plants ( <i>Dracaena trifasciata</i> )	1000
63	ZZ Plant ( <i>Zamioculcas zamiifolia</i> )	250
64	Jade Plant ( <i>Crassula ovata</i> )	600
65	Bougainvillea ( <i>Bougainvillea glabra</i> )	150
66	Lemon Grass ( <i>Cymbopogon flexuosus</i> )	150
67	Papaya ( <i>Carica papaya</i> )	20
68	Bamboo ( <i>Bambusa vulgaris</i> )	200
69	Century Plant ( <i>Agave americana</i> )	100
70	Coleus ( <i>Coleus amboinicus</i> )	600
71	Copper Leaf ( <i>Acalypha wilkesiana</i> )	700
72	Palmyra Palm ( <i>Borassus</i> )	6
73	Chinese Evergreen ( <i>Aglaonema modestum</i> )	50
74	Philodendron	25
75	Alocasia (duplicate)	20
76	Devil's Backbone ( <i>Euphorbia tithymaloides</i> )	250
77	Crape Jasmine ( <i>Tabernaemontana divaricata</i> )	40
78	Vinca ( <i>Catharanthus roseus</i> )	1300
79	Marigold ( <i>Tagetes erecta</i> )	1200
80	<i>Chrysanthemum carinatum</i>	300
81	Sunflower ( <i>Helianthus annuus</i> )	300

82	Mustard ( <i>Brassica juncea</i> )	1500
83	Melon ( <i>Cucumis melo</i> )	15
84	Money Plant ( <i>Epipremnum aureum</i> )	2000
85	Banana ( <i>Musa acuminata</i> )	40
86	Maize ( <i>Zea mays</i> )	2500

**Table 8: PBI of plants inside BBSR campus**

Measure	Value
S	86
D	0.056
1 - D	00.944
1/D	17.857
H	3.351
E	00.752



**Figure 7: Pie chart showing the Fauna distribution**

**Table 10: Orchids Population**

No.	Orchid Type	Quantity (nos)
1	Dendrobium	1700
2	Phalaenopsis	10
3	Vanda	6
4	Wild Orchid	100

**Table 9:PBI of Orchids**

Measure	Value
S	4
D	00.879
1 - D	00.121
1/D	1.138
H	00.269
E	00.194

**Table 10: List of plants in micro forest site**

No.	Plant Name (Common Name)	Botanical Name	Quantity
1	Champa	<i>Plumeria rubra</i>	6
2	Neem	<i>Azadirachta indica</i>	16
3	Karanja	<i>Pongamia pinnata</i>	18
4	Sunari / Golden shower	<i>Cassia fistula</i>	17
5	Mulberry	<i>Morus alba</i>	4
6	Ashoka	<i>Saraca asoca</i>	4
7	Baula	<i>Mimusops elengi</i>	22
8	Kusum / Lac tree	<i>Schleichera oleosa</i>	6
9	Jacaranda / Neel mohar	<i>Jacaranda mimosifolia</i>	17
10	Kamini	<i>Murraya paniculata</i>	19
11	Pride of India	<i>Lagerstroemia speciosa</i>	11
12	Katha Champa	<i>Plumeria pudica</i>	3
13	Chhena Phula / Crape Myrtle	<i>Lagerstroemia indica</i>	9
14	Fire Bush	<i>Hamelia patens</i>	50
15	Hibiscus (bush type)	<i>Hibiscus rosasinensis</i>	14
16	Betelnut	<i>Areca palm</i>	9
17	Pomelo	<i>Citrus grandis</i>	6
18	Kanchana / Orchid Tree	<i>Bauhinia variegata</i>	8
19	Phasi	<i>Anogeissus acuminata</i>	1
20	Tapioca	<i>Manihot esculenta</i> (Cassava)	8
21	Starfruit	—	9
22	Sal	<i>Shorea robusta</i>	7
23	Arjuna	<i>Terminalia arjuna</i>	10
24	Aparajita Tree	—	2
25	Jackfruit	<i>Artocarpus heterophyllus</i>	4
26	Elephant Apple	<i>Dillenia indica</i>	4
27	Curry Leaf / Sweet Neem	<i>Murraya koenigii</i>	2
28	Mango	<i>Mangifera indica</i>	5
29	Indian Almond	<i>Terminalia catappa</i>	6
30	Mahogany	<i>Swietenia macrophylla</i>	3
31	Tamarind	<i>Tamarindus indica</i>	5
32	Peacock Flower / Godibana	<i>Caesalpinia pulcherrima</i>	6

33	Radhachura	<i>Caesalpinia pulcherrima</i>	1
34	Kendu	<i>Diospyros melanocarpa</i>	3
35	Custard Apple	<i>Annona squamosa</i>	6
36	Sahada / Toothbrush Tree	<i>Streblus asper</i>	3
37	Putranjiva	<i>Putranjiva roxburghii</i>	5
38	Tecoma	<i>Tecoma stans</i>	4
39	Phalsa	<i>Grewia asiatica</i>	2
40	Bilberry	—	2
41	Peepal	<i>Ficus religiosa</i>	1
42	Red Sandalwood	<i>Pterocarpus santalinus</i>	5
43	Teak	<i>Tectona grandis</i>	1
44	Coffee	<i>Coffea arabica</i>	1
45	Nutmeg	<i>Myristica fragrans</i>	3
46	Indian Blackberry	<i>Syzygium cumini</i>	1
47	Dorian	<i>Durio zibethinus</i>	4
48	White Jamun / Water Apple	<i>Syzygium aqueum</i>	7
49	Bahada	<i>Terminalia bellirica</i>	5
50	Shishu / Indian Rosewood	<i>Dalbergia sissoo</i>	5
51	Gangasiuli / Night-flowering Jasmine	<i>Nyctanthes arbor-tristis</i>	3
52	Golap Jamun / Red Rose Apple	<i>Syzygium jambos</i>	1
53	Amla	<i>Phyllanthus emblica</i>	3
54	Jamaica Cherry	<i>Muntingia calabura</i>	1
55	Litchi	<i>Litchi chinensis</i>	2
56	Rudraksha	<i>Elaeocarpus angustifolius</i>	1
57	Rubber Plant	<i>Ficus elastica</i>	2
58	White Sandalwood	<i>Santalum album</i>	3
59	Wild Jasmine	<i>Jasminum arborescens</i>	1
60	Palasa	<i>Butea monosperma</i>	1
61	Clove	<i>Syzygium aromaticum</i>	1
62	Cocoa	<i>Theobroma cacao</i>	3
63	Harida	<i>Terminalia chebula</i>	5
64	Bel Fruit	<i>Aegle marmelos</i>	1
65	Avocado	<i>Persea americana</i>	1
66	Tejapatra / Indian Bay Leaf	<i>Cinnamomum tamala</i>	5
67	Hingu / Asafoetida	<i>Ferula asafoetida</i>	1
68	Jatropha	<i>Jatropha integerrima</i>	20

**Table 11: List of Plants in Microforest Site (PBI)**

Measure	Value
<b>S</b>	68
<b>D</b>	0.036
<b>1 - D</b>	00.964
<b>1/D</b>	27.778

<b>H</b>	3.745
<b>E</b>	00.888

**Table 12: Shows medicinal plants in Bhubaneswar campus**

No.	Common Name	Botanical Name	Quantity (nos)
1	Vach (Sweet Flag)	<i>Acorus calamus</i>	8
2	Amara Poi	<i>Kalanchoe pinnata</i>	10
3	Insulin Plant (Spiral Flag)	<i>Chamaecostus cuspidatus</i>	10
4	Brahma Jasti	<i>Clerodendrum serratum</i>	10
5	Ajwain (Thymol Seeds)	<i>Trachyspermum ammi</i>	12
6	Dasakerenta	<i>Barleria prionitis</i>	8
7	Aloe Vera	<i>Aloe vera</i>	12
8	Pasaruni	<i>Paederia foetida</i>	10
9	Thalkudi	<i>Centella asiatica</i>	40
10	Brahmi	<i>Bacopa monnieri</i>	100
11	Rosemary	<i>Rosmarinus officinalis</i>	10
12	Chirata	<i>Swertia chirayita</i>	10
13	Hemasagar	<i>Kalanchoe lacinata</i>	10
14	Gudmar	<i>Gymnema sylvestre</i>	10
15	Lemon Basil	—	20
16	Mashaparni	<i>Teramnus labialis</i>	10
17	Wild Coriander	—	100
18	Akarakara	<i>Anacyclus pyrethrum</i>	12
19	Water Hemp	<i>Ayapana triplin</i>	

**Table 15: Shows PBI of Medicinal Plants**

Measure	Value
<b>S</b>	29
<b>D</b>	00.101
<b>1 - D</b>	00.899
<b>1/D</b>	9.901
<b>H</b>	2.718
<b>E</b>	00.807

**Table13 : Biodiversity Calculator**

Category	# Found	Pi	Pi <sup>2</sup>	Pi ln Pi	Measure	Value
Lotus	20	0.006	0	-0.030	S	19
Lily	70	0.020	0	-0.079	D	0.059
Hydrocotyle	180	0.052	0.003	-0.154	1 - D	0.941
Portulaca	155	0.045	0.002	-0.140	1 / D	16.949
Mentha	250	0.073	0.005	-0.191	H	2.869
Lepidum	185	0.054	0.003	-0.157	E	0.975
Rotala	165	0.048	0.002	-0.146		
Rhodeola	210	0.061	0.004	-0.171		
Haloragis	250	0.073	0.005	-0.191		
Strobilanthes	200	0.058	0.003	-0.165		
Myriophyllum	90	0.026	0.001	-0.095		
Rubellia	155	0.045	0.002	-0.140		
Alternanthera	216	0.063	0.004	-0.174		
Hygrophila	250	0.073	0.005	-0.191		
Ludwigia	240	0.070	0.005	-0.186		
Launaea	215	0.063	0.004	-0.173		
Peperomia	240	0.070	0.005	-0.186		
Acanthospermum	190	0.055	0.003	-0.160		
Echinodorus	155	0.045	0.002	-0.140		
Total	3436	1				

**Table 14: Creatures present in the Campus**

Si No.	Category	Count/Estimates
1.	Snails	3,000
2.	Slugs	1,500
3.	Lizards	300
4.	Fireflies	2,000,000
5.	Chameleons	2,500
6.	Termites	10,000,000
7.	Ants	Millions (various types)
8.	Beetles/Bugs	Hundreds of species, millions
9.	Butterflies	~45 named species (listed)
10.	Bees	3 species (Apis dorsata, cerana, mellifera)

**Butterflies:** Angled castor, Blue Mormon, common evening brown, common leopard, common wanderer, dry season bush brown, red tip, common four rings, common Mormon,

common sailor, striped albatross, banded peacock, chocolate pansy, common grass yellow, common reeye, gram blue, pioneer, striped tiger, baronet, commander, common gull, common rose, crimson rose, grass blue, tailed jay, three spot grass yellow, tawny coaster, common Silverline, common crow, common Pierrot, common wanderer, crimson rose, danaid egg fly, grass dart, psyche, tailed Jay, common emigrant, striped tiger, red tip, three spot grass yellow, lemon pansy, gram blue, grass demon.

**Bees:** *Apis dorsata*, *Apis cerana indica*, *Apis mellifera*

**Table 15: Native Free-living birds**

No.	Bird Name	Quantity
1	Parrots	150
2	Common Myna	450
3	Budgerigar	25
4	Red-vented Bulbul	55
5	White-throated Kingfisher	25
6	Black-hooded Oriole	15
7	Cuckoo	30
8	Greater Coucal	100
9	Crow	350
10	Eagle	10
11	Scaly-breasted Munia	5000
12	Blue Pigeon	1500
13	Yellow-billed Babbler	2500
14	White-breasted Waterhen	60

**Table 16: PBI of Native Free-living birds**

Measure	Value
<b>S</b>	14
<b>D</b>	00.321
<b>1 - D</b>	00.679
<b>1/D</b>	3.115
<b>H</b>	1.455
<b>E</b>	00.551

**Table 17: List of Animals**

Sl. No.	Animal/Reptile Name	Quantity
1	Native Cows	30
2	Dogs	60
3	Cats	25

4	Cobra	20
5	Water Snake	15
6	Wolf Snake	40
7	Squirrel	2500

**Table 18: PBI of Animals**

<i>Measure</i>	<i>Value</i>
<i>S</i>	7
<i>D</i>	00.865
<i>1 - D</i>	00.135
<i>1/D</i>	1.156
<i>H</i>	00.375
<i>E</i>	00.192

**✚ Pond restoration:**

Centurion University’s pond restoration projects have transformed campus water bodies into thriving ecosystems through a coordinated program of desilting, water-quality enhancement, and ecological habitat creation. Through regular weed clearance—including removal of invasive plants like water hyacinth and salvinia—and biological controls such as the introduction of grass carp, the ponds’ water chemistry has improved and ecological balance restored. The university also planted native aquatic vegetation and introduced indigenous fish species (e.g., carp—catla, rohu, mrigal) reared in-campus hatcheries, ranching thousands of fingerlings into ponds and nearby reservoirs to boost biodiversity and fish stocks. As these wetlands were revitalized, they now serve as habitats for birds, amphibians, and aquatic insects, while supporting groundwater recharge, local climate moderation, and biodiversity conservation. Beyond ecological outcomes, the restored ponds now function as invaluable resources for research, hands-on teaching, community engagement, and recreation—embodying Centurion University’s commitment to aquatic stewardship and sustainable campus development.



**Figure 8: Restoration of pond diversity**

### ✚ Orchidarium:

The Orchidarium is an ecological gem established at the M.S. Swaminathan School of Agriculture at CUTM, Paralakhemundi. It houses 550 orchid plants across five species, sourced from diverse regions such as Odisha, Andhra Pradesh, and Siliguri. This facility serves multiple purposes: Propagation & acclimatization of orchids to local agroclimatic conditions, Distribution of plantlets to farmers and aspiring orchid entrepreneurs in the region. Strategically integrated within a broader commercial horticulture nursery spanning 2 acres, the Orchidarium complements a diverse plant ecosystem that includes over 200 species of ornamentals, fruits, medicinal, and vegetable seedlings. The nursery is supported by polyhouses and shade-net houses capable of producing up to 10,000 plantlets monthly.



Figure 9: Glimpses of Orchidarium

### ✚ Bio gas plant as energy resources:

A cubic meter FRP floating drum biogas plant at the campus processes 40 kg of organic waste daily through anaerobic digestion, efficiently converting it into biogas. The biogas produced is primarily used for cooking purposes, contributing to clean energy usage on campus. Additionally, the nutrient-rich biogas slurry generated as a byproduct is utilized as organic manure and in vermicomposting, supporting sustainable waste management and enhancing soil fertility for organic farming. Beyond its environmental benefits, the biogas plant also serves as a practical learning resource for students, who engage with it during their coursework to gain hands-on experience in renewable energy systems, waste-to-energy technologies, and sustainable agricultural practices.

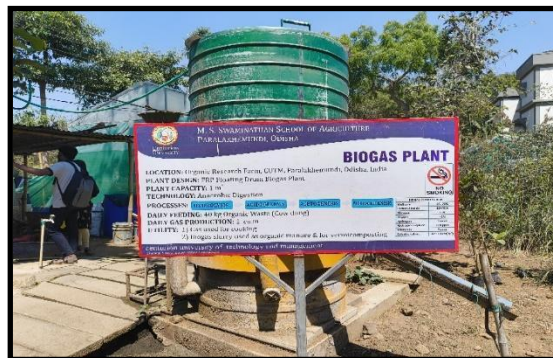


Figure 10: Biogas plant

### ✚ Use of Solar energy in the campus:

The total power consumption of the campus is 9511.68 KVA. To promote sustainability and reduce reliance on conventional energy sources, the campus has installed solar infrastructure, including three solar-powered pumps. Additionally, energy efficiency is prioritized through the use of LED lighting across all buildings and the installation of 165 solar-powered street lights, significantly reducing energy consumption and supporting environmentally responsible practices.



**Figure 11: Demonstration of Solar panels**