GREEN AUDIT REPORT

2018 - 2019

by

Department of Botany

Kongunadu Arts and Science College (Autonomous)

[Re-accredited by NAAC with 'A' Grade 3.64 CGPA out of 4 (3rd cycle)

College of Excellence (UGC)

Coimbatore – 641 029, Tamil Nadu

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Kongunadu Arts and Science College (KASC) is one of the oldest colleges in Coimbatore, the western part of Tamil Nadu where agriculture and industrial developments are very progressive in Tamil Nadu. In addition to best education to the rural students, the college provides best research opportunities and provision for extension activities for the interest of the common public. More than 50% of the students is mainly female gender almost in all subjects. The college is situated at the foot hills of Western Ghats at the altitude of 400 meters MSL. It indicates that it is very access to the vegetation and other landscapes of Western Ghats particularly the Nilgiris. College administration is having keen interest in maintaining green campus, an ecofriendly approach towards getting sustainable ecosystem service. "Green auditing" is practiced in the every year in order to improve environmental protection. The Department of Botany of KASC has been doing green auditing process since 2014 – 2015. It includes auditing of the flora and fauna, plastic free zone, green cover, solar energy and usage of LED lights.

Flora

The list of trees, shrubs, climbers and herbs available in the year 2018 - 2019 is given below.

S. No.	Scientific Name	Family
1.	*Acacia nilotica*	Mimosaceae
2.	*Acalypha indica*	Euphorbiaceae
3.	*Acanthospermum hispidum*	Asteraceae
4.	*Aegle marmelos*	Rutaceae

5.	*Achyranthes aspera*	Amaranthaceae
6.	*Aerva lanata*	Amaranthaceae
7.	*Albizia amara*	Mimosaceae
8.	*Alternanthera pungens*	Amaranthaceae
9.	*Alternanthera sessilis*	Amaranthaceae
10.	*Alysicarpus monilifer*	Fabaceae
11.	*Alysicarpus rugosus*	Fabaceae
12.	*Amaranthus spinosus*	Amaranthaceae
13.	*Azadirachta indica*	Meliaceae
14.	*Bauhinia malabarica*	Caesalpinaceae
15.	*Blumea obliqua*	Asteraceae
16.	*Boerhaavia diffusa*	Nyctaginaceae
17.	*Boerhaavia erecta*	Nyctaginaceae
18.	*Bougainvillea glabra*	Nyctaginaceae
19.	*Brachiaria ramosa*	Poaceae
20.	*Callistemon lanceolatus*	Mytraceae
21.	*Calotropis gigantea*	Asclepidaceae
22.	*Cardiospermum halicacabum*	Sapindaceae
23.	*Cassia fistula*	Caesalpinaceae
24.	*Cassia siamea*	Caesalpinaceae
25.	*Chloris barbata*	Poaceae
26.	*Cleome pentaphylla*	Capparidaceae
27.	*Clitoria juncea*	Fabaceae
28.	*Clitoria ternatea*	Fabaceae
29.	*Coccinia indica*	Cucurbitaceae

30.	*Commelina benghalensis*	Commelinaceae
31.	*Corchorus tridens*	Tiliaceae
32.	*Croton bonplandianum*	Euphorbiaceae
33.	*Cuscuta chinensis*	Convolvulaceae
34.	*Cynodon dactylon*	Poaceae
35.	*Cyperus iria*	Cyperaceae
36.	*Cyperus rotundus*	Cyperaceae
37.	*Dactyloctenium rotundus*	Poaceae
38.	*Datura metel*	Solanaceae
39.	*Delonix regia*	Caesalpinaceae
40.	*Digera arvensis*	Amaranthaceae
41.	*Digitaria longiflora*	Poaceae
42.	*Eragrostis riparia*	Poaceae
43.	*Eucalyptus tereticornis*	Mytraceae
44.	*Eupatorium odoratum*	Asteraceae
45.	*Euphorbia heterophylla*	Euphorbiaceae
46.	*Euphorbia microphylla*	Euphorbiaceae
47.	*Euphorbia hirta*	Euphorbiaceae
48.	*Evolvulus alsinoides*	Convolvulaceae
49.	*Gisekia pharnaceoides*	Aizoaceae
50.	*Gloriosa superba*	Liliaceae
51.	*Gomphrena decumbens*	Amaranthaceae
52.	*Hibiscus micranthus*	Malvaceae
53.	*Ichnocarpus frutescens*	Apocynaceae
54.	*Indigofera enneaphylla*	Fabaceae

55.	*Indigofera viscosa*	Fabaceae
56.	*Ipomoea obscura*	Convolvulaceae
57.	*Justicia tranquebariensis*	Acanthaceae
58.	*Kyllinga triceps*	Cyperaceae
59.	*Lantana camara*	Convolvulaceae
60.	*Malvastrum coromandelianum*	Malvaceae
61.	*Millingtonia hortensis*	Bignoniaceae
62.	*Mimosa pudica*	Mimosaceae
63.	*Mimusops elengi*	Sapotaceae
64.	*Mollugo nudicaulis*	Aizoaceae
65.	*Morinda tinctoria*	Rubiaceae
66.	*Mukia maderaspatana*	Cucurbitaceae
67.	*Murdannia dimorpha*	Commelinaceae
68.	*Oldenlandia umbellata*	Rubiaceae
69.	*Parthenium hysterophorus*	Asteraceae
70.	*Passiflora foetida*	Passifloraceae
71.	*Pavonia zeylanica*	Malvaceae
72.	*Peltophorum ferrugineum*	Caesalpinaceae
73.	*Pergularia daemia*	Asclepidaceae
74.	*Peristrophe bicalyculata*	Acanthaceae
75.	*Perotis indica*	Poaceae
76.	*Phyllanthus amarus*	Euphorbiaceae
77.	*Phyllanthus maderaspatensis*	Euphorbiaceae
78.	*Physalis minima*	Solanaceae
79.	*Polygala bulbothrix*	Polygalaceae

80.	*Pongamia pinnata*	Fabaceae
81.	*Prosopis spicigera*	Mimosaceae
82.	*Prosopis glandulosa*	Mimosaceae
83.	*Quisqualis indica*	Mimosaceae
84.	*Rhynchosia minima*	Fabaceae
85.	*Samanea saman*	Mimosaceae
86.	*Sida acuta*	Malvaceae
87.	*Solanum nigrum*	Solanaceae
88.	*Spermacoce hispida*	Rubiaceae
89.	*Sporobolus coromundelianus*	Poaceae
90.	*Spathodea campanulata*	Bignoniaceae
91.	*Tabernaemontana divaricata*	Apocynaceae
92.	*Tecoma stans*	Bignoniaceae
93.	*Tephrosia procumbens*	Fabaceae
94.	*Tephrosia purpurea*	Fabaceae
95.	*Tinospora cordifolia*	Menispermaceae
96.	*Trianthema portulacastrum*	Aizoaceae
97.	*Tribulus terrestris*	Zygophyllaceae
98.	*Trichodesma indicum*	Boraginaceae
99.	*Tridax procumbens*	Asteraceae
100.	*Vernonia cinerea*	Asteraceae
101.	*Vicoa indica*	Asteraceae
102.	*Waltheria indica*	Sterculiaceae

Fauna

Since the campus is having a high degree of green cover mainly due to trees, many number of avian fauna inhabit the institution. In addition, reptiles and rodents are also common in the campus. Grains and water are also provided to the birds and other wild species by the students of biodiversity conservation interest. Some of the common fauna available in the college campus is given below.

S. No.	Scientific Name	Common Name
1.	*Clamator jacobinus*	Pied Crested Cuckoo
2.	*Merops orientalis*	Small green Bee-eater
3.	*Merops philippinus*	Blue tailed Bee-eater
4.	*Tephrodornis* sp.	Common Wood-Shrike
5.	*Acridotheres tristis*	Common myna
6.	*Dicrurus macrocercus*	Black drongo
7.	*Corvus splendens*	House crow
8.	*Corvus macrorhynchus*	Jungle crow
9.	*Rana luteiventris*	Frog
10.	*Tyto alba*	Barn owl
11.	*Athene brama*	Spotted owl
12.	*Orthotomus sutorius*	Common Tailor bird
13.	*Pteropus giganteus*	Flying fox
14.	*Funambulus palmarum*	Indian Palm Squirrel
15.	*Spilopelia senegalensis*	Little-Brown Dove
16.	*Accipiter badius*	Shikra
17.	*Columba livia*	Blue-rock Pigeon
18.	*Canis lupus familiaris*	Dog

19.	*Felis catus*	Cat
20.	*Aphis pomi* DeGreer	Aphids
21.	*Solenopsis* sp.	Ants
22.	*Acanthepeira stellata*	Spider
23.	*Argiope florida*	Florida garden spider
24.	*Calotes versicolor*	Garden lizard
25.	*Rattus norvegicus*	Brown rat
26.	*Passer domesticus*	House sparrow
27.	*Coptotermes formosanus*	Termite
28.	*Apis dorsata*	Indian bee
29.	*Apis florea*	Small bee
30.	*Papilio machaon*	Butterfly
31.	*Ampullariidae* sp.	Apple snail
32.	*Junonia lemonias*	Lemon pansy
33.	*Danaus chrysippus*	Plain tiger
34.	*Danaus genita*	Striped tiger
35.	*Acraea terpsicore*	Tawny coaster
36.	*Tirumala limniace*	Blue tiger
37.	*Neptis hylas*	Common sailer
38.	*Papilio paris*	Paris peacock
39.	*Graphium doson eleius*	Common blue bottle
40.	*Melanitis leda*	Common evening brown
41.	*Papilio romulus*	Common mormon
42.	*Catopsilia pomona*	Common emigrant
43.	*Aedes, Culex, Anopheles*	Mosquito
44.	*Sympetrum flaveolum*	Dragonfly
45.	*Phylliidae*	Leaf insect

46.	*Phasmatodea* sp.	Stick insect
47.	*Charidotella* sp.	Golden Beetle
48.	*Lepisma saccharina*	Silverfish
49.	*Pavo cristatus*	Peacock
50.	*Periplaneta americana*	Cockroach
51.	*Lumbricus terrestris*	Earthworm
52.	*Diplopoda*	Millipedes
53.	*Chilopoda*	Centipedes

Green cover

It is assessed that tentatively 40% of the geographical area of the campus was occupied by green cover of the tree species. It is well beyond the standard prescribed by the Indian forest policy, 33%.

Rain water harvesting

All over the campus at eight different places, rain water harvesting units each with the size of 12’ x 8’ x 10’ for roof top water harvesting. As per the information of college administration, it is known that for the students and staffs members and for laboratory usage, the bore well situated in the college provided complete supply of water. No amount of water was purchased for this purpose. However, before the construction of rain water harvest unit to meet the demand, an average of 20,000 liters of water was purchased every day. Apart from the rain water harvest unit, the surface water during rainy days was permitted to percolate in the soil to augment ground water at maximum extend. This is mainly due to non-sealing of the earth surface by the tiles, cement concretes, etc. wherever it is possible. The average annual rain water harvesting during the year 2018-2019 was 24,46,710 L.

The green cover in the college campus

The rain water harvesting unit

Solar Energy

Solar energy production is the approach towards green energy. Thus it reduces pollution hazardous in general and college environment in particular. The solar energy can be used for different purposes like water heating, laboratory uses, lighting the bulbs, etc. Solar panel with the capacity of 150 KW installed within the campus in January 2017. The power production for the institution use was about 500 units per day during summer season

Total energy consumption by solar panels in 2018

Solar panel	Units
100 KW	53,879
50 KW	11,190
Total	**65,069**

Inter and Intranet communications

Intranet facility was created for communicating the circulars and other information to staff members, scholars and students. This was reducing the stationery usage like papers considerably with in the campus.

Light-emitting diode (LED) lights

The LED lights can reduce energy usage about 80% as compared with fluorescent and incandescent lights. Hence, tube lights and other CFL bulbs have been replaced with LED in our college campus. So far, a total LED lighting load of 18.930 KW has been used (like street lights, class room lights and focus lights).

Solar roof panels in the college campus

Installation of LED lights

LED lights	Quantity (No.)	Watt	Total Watt
Street lights	25	40	1,000
Class room	884	20	17,680
Focus	5	50	250
Total lighting load			**18,930**

Vermicomposting

Vermicomposting is the most eco-friendly recycling process to reduce organic waste. This recycling process converts organic debris into high quality compost and makes the nutrients easily available to the plants. Vermicomposting is essentially the decomposition organic materials by earthworms. The solid biodegradable waste generated in our college campus has been used for vermicomposting purpose. The step requires about 45 days for completing vermicomposting. At present, our college management has installed two vermicomposting units and the Department of Zoology has been maintaining these units. The final product is used for gardening purposes within the college campus.

Greenhouse

Greenhouse is designed for the protection of tender plants against excessive cold or heat. Recently, our college constructed a greenhouse (4’ x 5’) for protecting some important ornamental and medicinal plants from the heat. Botany, Biochemistry and Biotechnology departments have been using the greenhouse facility for research and nursery purposes.

The vermicomposting unit in the college campus

The greenhouse facility in our college campus

E-waste management

Our college signed a MoU with Green Era Recyclers, Coimbatore for recycling the E-waste. During 2018 – 2019, a total of 1,820 kg of E-waste were collected from our college. These E-waste were recycled and disposed in a scientific and environmentally friendly manner.

Sewage Treatment Plant

At present, global water scarcity is looming large and worldwide there is an attempt to conserve water. This has resulted in nations looking for ways to reduce the water consumption and also recycle and reuse the waste water. Recycling of waste water will drastically reduce the rate of depletion of surface and ground water. In this context, our college installed sewage treatment plant in May 2019 for the treatment of waste water coming from hostels and laboratories. The treated water is mainly used for gardening purposes.

Awareness programmes

Eco Club of our college has conducted numerous events in order to provide awareness to students, staffs and public.

S. No	Date	Name of the Activity	Remarks
1.	05.06.2018	Plastic cleaning drive for beat plastic pollution	Global event of World Environment Day celebrated on Tuesday (June 5, 2018) to create awareness among people on how plastic is a slow killer. The theme

			of this year's Environment Day is 'Beat Plastic Pollution'. These volunteers cleaned plastics wastes and planted saplings in lake at Vellakinar. The volunteers of the club motivated the people to keep their surroundings green and plastics free environment by undertaking plantation of trees and also sensitize them to minimize the use of plastics.
2.	18th and 19th June 2018	Plants distribution to parents of First U.G. students	About 1500 native plants saplings were distributed to Parents, the plants saplings sponsored by Vananm foundation, Coimbatore.
3.	18th July 2018	Orientation programme for Eco Club students	The Eco Club has organized orientation programme for students, about 350 students were

			participated.
4.	27th July 2018	Eco Club of KASC and Success Charitable Trust, Chinna Thandagam, Coimbatore have jointly organized Dr. APJ Abdul Kalam 3rd Memorial day	About 500 students and publics were participated, during the event native plants saplings were distributed to school students and publics at Chinna Thadagam village, Coimbatore.
5.	10th August 2018	International Conference on Wildlife management in India and United States and Logo released by our respected Secretary and Director	The Eco club of our college organised a one day International National Conference on 'Wildlife Management in India and United States'.
6.	1st September 2018	State Level Workshop on Vulture Conservation (INTERNATIONAL VULTURE DAY)	The State Level Vulture Conservation Workshop was organized by PG and Research Department and Eco Club during World Vulture Awareness Day on 01.09.2018 at conference hall in the Kongunadu Arts and

			Science College. The posters and banners in both Tamil and English languages on vultures were displayed in the conference gallery hall for participants.
7.	3rd September 2018	Wild Wisdom City Level Quiz Competition (Inter school quiz)	In an event jointly organised by Eco Club of Eco Club of Kongunadu Arts and Science College and WWF India on the campus have organized quiz programme to school students, about 150 students from various schools in Tamil Nadu have been participated.
8.	5th October 2018	Wildlife Week Celebration 2018	On 5th October 2018, Coimbatore, Kongunadu Arts and Science College in association with World Wide Fund for Nature India, Coimbatore is jointly organized Wildlife Week Celebration at Kongunadu Arts and Science College, Coimbatore.
9.	24th and 25th January, 2019	National workshop on Conservation and Management	The National Level workshop on

		Strategies of Native Cattle and Vultures	Conservation and Management Strategies of Native Cattle and Vultures will be organized by Eco Club and PG and Research Department to be held between 24th and 25th at conference hall in our college.
10.	12nd and 13th, February, 2019	Eco Trail programme for government corporation school students	Eco Club student members have actively participated and volunteered The Eco Trail programme for Government Corporation School Students at Kallar Horticultural Farm.
11.	25th to 27th February, 2019	Eco Trail programme for government corporation school students	Eco Club student members have actively participated and volunteered The Eco Trail programme for Government Corporation School Students at Kallar

			Horticultural Farm.
12.	26th February, 2019	Guest lecture on Climate change impact on global warming	On 26th February 2019, Coimbatore, Eco Club of Kongunadu Arts and Science College organized Guest lecture on Climate change impact on global warming. About 100 Eco Club's students were participated.

Expenditure made on green campus: Rs. 29,82,626/-

Suggestions and Recommendations

1. Improvement in existing medicinal garden by planting and maintaining still more number of plant species.
2. Maintenance of rain water harvesting unit by adopting suitable methods.
3. Environment day, forest day and water day can be organized in respective days to give awareness about these resources.
4. Awareness programs may be organized about flora and fauna.

Signature of the committee members

S. No.	Committee members	Signature
1.	Dr. N. Nagarajan	N. Nagarajan 30/3/2019
2.	Dr. K. Thenmozhi	30/03/2019
3.	Dr. P. Sumathi	ON MEDICAL LEAVE
4.	Dr. K. Karthika	K. Karthika 30/3/19
5.	Dr. T. Muthukumar	30/3/2019