

ENVIRONMENT

Chennai Metro's Environment news, views and announcements



MR. PRADEEP YADAV I.A.S
MANAGING DIRECTOR

MD's Message

India has a long history of conservation and sustainable use of natural resources, strategies and plans for the conservation and sustainable use of biological diversity which are rooted in our spiritual and cultural traditions. The environment plays a crucial role in the peoples physical, mental and social well-being. The complex relationship between environmental factors and human health, taking into considering multiple pathways and interactions must be seen in a broader spatial, socio-economic and cultural context.

Environmental issues are being addressed at various forums within the context of ozone depletion, climate change, biodiversity loss and genetic erosion. One of the important concerns of CMRL is environment improvement through rigorous implementation of environment related rules and regulations. The recent thrust of CMRL is to strengthen the environment wing to achieve the goal of environment friendly atmosphere.

I congratulate Dr. Rajeev Srivastava Chief Advisor (Environment) and his team for bringing out this newsletter on Environment related issues which will sensitize and aware people about the importance of having clean and green environment. CMRL family believes in togetherness and committed to achieve the aim of having green, clean and pollution free atmosphere.

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**TREES ACT AS BIOLOGICAL
LUNGS WHICH PURIFY THE
AIR AND PROVIDE PURE
OXYGEN TO INHALE.
PLANT MORE TREES...**



DR. RAJEEV SRIVASTAVA I.F.S (RETD.)
CHIEF ADVISOR (ENVIRONMENT)

From the pen of Chief Advisor - Environment

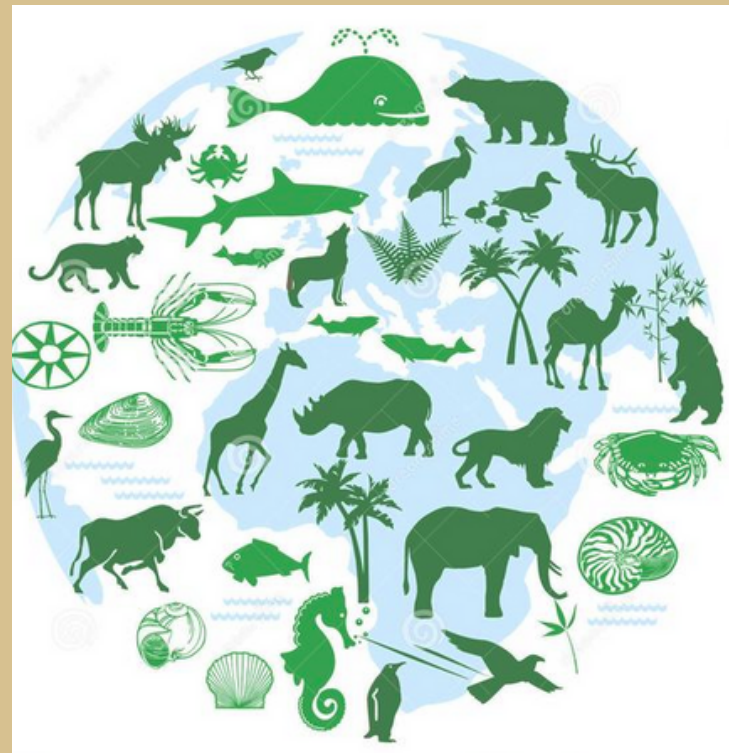
India has an ancient history of protection and cleaning up of environment which was the essence of our past culture. Various documents of early period emphasize to build better nexus between forests, natural resources and living beings. There are three major issues surrounding one environmental related to survival of living being on this planet are global warming and climate change, water pollution and ocean acidification and loss of bio diversity. Other environmental issues presently faced in India are air pollution, poor management of solid waste, water pollution and its scarcity, depletion of natural resources due to urbanization, soil pollution and noise pollution.

*Biodiversity is essential for
guaranteeing the healthiness of
humans.*
- Thomas E Lovejoy

CMRL is committed to address all above-mentioned issues by way of monitoring, auditing, augmenting and planting. In the past CMRL has taken several steps to give better environment. One of its first initiative was the creation of Miyawaki Forest.

Now present team is working out new initiative by developing eco-vibrant unit by planting indigenous trees, herbs and shrubs which will not only give green clean environment but also help various living creatures to get shelter and food. These pockets will act as Eco hub and micro lung for the city. Let us join to help, protect and regreen the area for peaceful co-existence.

DECIDE YOURSELF?
OXYGEN FROM PLANTS.
OR
OXYGEN FROM PLANTS.



Transplantation of Trees

BY M.PREMNATH (ES)

Tree transplantation is the latest technology to suite the need to conserve trees. The trees are an important part of our ecosystem, and play a vital role in maintaining the biodiversity of the area. In order to facilitate construction of large scale projects without cutting of trees, this technology has been developed. Since trees have been established for many years, it is not possible to lift a tree overnight.

An uprooted tree could be saved through transplantation, if its roots have not lost their moisture and the root ball remains intact. Its survival however depends on its age. Trees aged between 5 and 10 years are likely to flourish after a transplantation, but those that are over 20 years old may not be able to adapt to the new environment. A good growth and yield cannot be expected of such trees, down the years. Other parameters that determine the health of a transplanted tree includes location, type of soil, nature of root structure, species of the tree and girth. The entire method is divided into the following steps: 1. Preliminary root investigation, 2. Health diagnosis of the tree and 3. Treating the infected trees.

The condition of the soil where the tree has to be transplanted is thoroughly checked & necessary treatments are applied to the soil after digging a pit. The pit size has to be in accordance with the root ball of the tree. There are great differences in the environmental requirement for each tree. The light conditions, moisture, soil pH, wind exposure & improved drainage should be taken into consideration. All plants require space for root and crown development therefore adequate distance between other plants is necessary. Pruning the roots in will initiate fresh growth of roots and make the plant adapt itself gradually into a new routine.



Since roots are cut in a phased manner labour is required all through this period. Also before initiating root cutting process, we make sure that the tree is not infected.

It should be ensured that the roots always remain moistened with regular watering. Fertilizers, pesticides and even bio-manure should not be applied till the roots get a firm anchorage in the new soil.

Trees such as pungam, mantharai, purasu, Indian coral, casuarina, mango, peepal, coconut, jack-fruit, golden shower, sapota can be considered for transplantation.

Transplantation is certainly a costly exercise. Transplantation of a young tree costs Rs. 2,000 and transplanting an old and huge tree could cost anywhere between Rs. 10,000 and Rs. 70,000 approximately.



NOISE - SOURCES, EFFECTS AND MITIGATION

BY D.G. JAYAPRASAND

Noise is another word for sound. It usually means it is not wanted. Noise is perceived by our ears. They can be damaged by noise. Noise is created through any object, which produces vibration unnecessarily. Noise may not seem as harmful as the contamination of air or water, but it is a pollution problem that affects human health and can contribute to a general deterioration of environmental quality. Noise is undesirable and unwanted sound. Sound is measured in a unit called the decibel (dB). There are numerous sources but may be broadly classified into two classes such as indoor and outdoor:

Outdoor: Industries/factories, vehicular movements such as car, motor, truck, local train, tempo, motor cycle etc., Construction work defense equipment's, explosions, playing of loudspeakers during various festivals etc.

Indoor: Loudly played radio or music systems, and other electronic gadgets etc.



IN INDIA, NOISE FROM ROAD TRAFFIC ALONE IS ONE OF THE MOST HARMFUL ENVIRONMENTAL STRESS OR AFTER AIR POLLUTION, ACCORDING TO THE WORLD HEALTH ORGANIZATION

Area code	Category of area/zone	Limits in dB(A) leq*	
		Day time	Night time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence zones	50	40

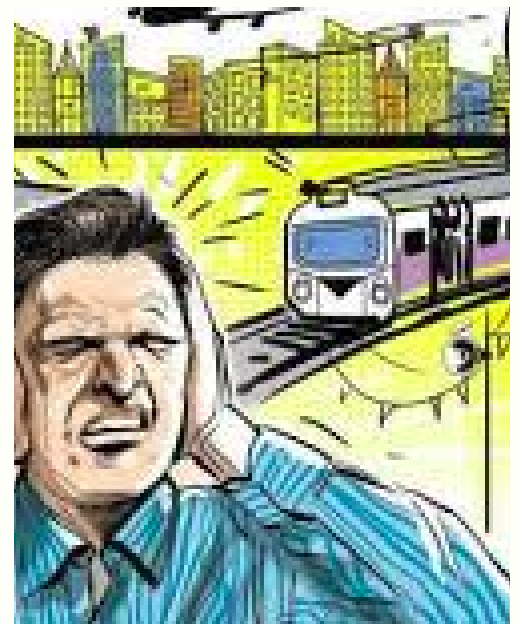
*dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing. Source: Central Pollution Control Board, India

EFFECTS OF NOISE POLLUTION

- a. Rapid increase in technology, industrialization, urbanization and other communication and transport systems, noise pollution has reached to a disturbing level over the years which needs to be studied and controlled to avoid different health effects like high blood pressure, sleeplessness etc
- b. It has been observed that the performance of school children is poor in comprehension tasks when schools are situated in busy areas of a city and suffer from noise pollution disturbance.
- c. Interferes with normal auditory communication, it may mask auditory warning signals and hence increases the rate of accidents especially in industries.
- d. The effects can range in severity from being extremely annoying to being extremely painful and hazardous lowers workers efficiency and productivity and higher accident rates on the job.
- e. In additions to hearing losses, excessive sound levels can cause harmful effect on the circulatory system by raising blood pressure and altering pulse rates.
- f. Noise monitoring to be conduct to identify the interpretation of the results, based on the results control measures can be adopted.

WAYS TO MITIGATE NOISE

- a. People can prefer metro rail transport in metropolitan cities (A 50% reduction of traffic volume may occur). Metro Rail is an Eco-friendly, it causes no air pollution, much less sound pollution.
- b. Using less noisy equipment is one of the most effective ways to reduce the noise caused by individual equipment.
- c. Utilizing muffler systems can help to reduce the noise from internal sound.
- d. Equipment and machinery shall not be kept idle when not in use.
- e. If the source of noise is unavoidable use ear plugs to avoid noise.



FICUS BENGHALENSIS - BANYAN TREE

India's National Tree

BY SARAVANA KUMAR R. (DM-ENVIRONMENT)

Ficus benghalensis (Moraceae, Mulberry family) is commonly known as Banyan tree and is tree native to India. There are more than 800 species and 2000 varieties of *Ficus* species, most of which are native to the old-world tropics.

Different parts of the tree have been found to possess medicinal properties; leaves are good for ulcers, aerial roots are useful in gonorrhea, seeds and fruits are cooling and tonic. The roots of *Ficus benghalensis* are given for obstinate vomiting and infusion of its bark is considered as a tonic and astringent used in diarrhea, dysentery and diabetes. The other uses such as the aerial roots are used for temporary binding materials. The latex obtained from all parts of the plant can be used to produce an inferior quality rubber.

The banyan tree enjoys huge cultural importance in India. It is considered sacred among the Hindu population with temples and shrines being built under its shade quite often. Banyan tree is commonly symbolic of an eternal life as it has a very lengthy lifespan.

The banyan tree is often the focus of a rural establishment. The shade of the banyan tree provides a soothing backdrop for peaceful human interactions.

The banyan tree is popularly known for its ability to emit a large amount of oxygen. All these trees that emit oxygen at night undergo a type of photosynthesis called Crassulacean Acid Metabolism (CAM). According to this process, they emit a considerable amount of oxygen at night. Every part of the Banyan tree comes in handy and has a sizeable amount of medicinal and herbal properties.

The banyan tree is among those trees that have lived through generations and continue to provide for the living. Planting such trees in your surroundings can be extremely beneficial as they ensure the purity of air and reduce the presence of carbon dioxide in the atmosphere.



THE GREAT BANYAN TREE IS OVER 250 YEARS OLD AND COVERS ABOUT 14,500 SQUARE METERS OF LAND (3.5 ACRES) IN THE ACHARYA JAGADISH CHANDRA BOSE BOTANICAL GARDEN NEAR KOLKATA, MAKING IT THE WIDEST TREE IN THE WORLD.



ECO-FRIENDLY GREEN BOXES AT CMRL



INSPECTION BY MD AT KOYAMBEDU METRO STATION



CMRL has installed Green Boxes of Sciophytes plant species in shaded areas of Metro Station platforms generating more oxygen and also enhancing aesthetic value to the Metro Stations.

These green boxes which are made up of eco-friendly materials have been installed at Koyambedu Metro Station. These Green Boxes have been placed on a sand filled tray to collect the excess water draining from the box to prevent water spillage into the platform.

Raphix excelsa (Lady Palm), Pentanus, Schefflera variegated (Dwarf Umbrella Plant) etc., are foliage indoor plants/shrubs that have been planted in the Green Boxes which helps in absorbing Carbon dioxide, and also purify the air in the Metro Station.

