

BEFORE THE NATIONAL GREEN TRIBUNAL SOUTH ZONE AT CHENNAI
MEMORANDUM OF APPLICATION
(Under Sections 14 read with 18(1) of the National Green Tribunal Act,
2010)

OA No. 97 of 2020

Bharathiraja M

... Applicant

Vs

1. The State of Tamilnadu & Ors

... Respondents

**Reply in response to the Report submitted to the Hon'ble National
Green Tribunal, Southern Zone Bench, Chennai by the Joint Committee**

I, Bharathiraja M S/o V Munuswamy, residing at No. 53 A Bangalore main road, Sriperumbudur 602105 Kanchipuram district, Tamilnadu do hereby solemnly affirm and sincerely state as follows:

1. I am the applicant herein and I am aware of the facts of the case and competent to affirm this affidavit.
2. The present application concerns the planting of exotic, non-native and invasive species of trees / plants in the Vandalur zoo premises and the impact it would have on the biodiversity of the zoo area and the adjacent forest lands. The master plan of the Zoo clearly states that exotic plants / trees should not be planted.
3. The Master plan of the 2nd respondent Zoo for 2013-2023 was approved by the Central Zoo Authority in its 66th meeting on 11/06/2013 and extracts from this report have been filed as **Annexure A-4** along with a memo filed by the applicant. The Master plan at Chapter II in fact notes that ornamental trees in the zoo should be phased out. The report at 2.1 states

"Keeping with the prevailing trend at the time of construction of the zoo extensive plantations of ornamental trees has been done, which

M. Bharathiraja M

does not fit with the landscape of the zoo. The same need to be phased out expeditiously."

4. Further, under chapter VI of the master plan dealing with environmental management, it has clearly been stated at 6.1 as follows,

" Every effort will be made by the zoo to maintain the forest character of the zoo premises. To achieve this goal the exotic species particularly eucalyptus, prosopis and non- indigenous flowering plants/trees would be phased out in a phased manner and replaced with species endemic to the region. The trees in animal enclosures will be replaced with the species forming part of the animal habitat."

5. It is necessary to submit that housing exotic animals in the zoo in enclosures is in no way related to the planting of exotic, non-native species of plants in the zoo area. Only trees in animal habitat (enclosure) need to be species forming part of the animal habitat.
6. It is submitted that the report submitted by the committee constituted by this Hon'ble Tribunal is liable to be rejected as it is unscientific, misleading, contrary to the zoo's own master plan and has been authored by a committee comprising of the Zoo's director and hence cannot be accepted. There is a clear case of conflict as the Zoo's director is the head of the entity that has carried on the subject plantation. The report is liable to be rejected on this very ground.
7. It is submitted that the report glosses over the fact that there is enough scientific evidence to support the fact that introduction of non-native exotic species will result in their spread in an area that they otherwise are absent. In the page 4 the report states

It is submitted that the use of the term 'exotic' to describe a 'non-native species' is not popularly used in the scientific literature of the subject. It is a colloquial term used with political connotations. Some of the widely used terms in this scientific field are provided below:

8. It is submitted that the term 'exotic' is very commonly used in scientific literature and so are the terms 'non-native and alien'. For example in one

M. B. Laxmi

of its publication of Botanical Survey of India - Environmental Information System (ENVIS) it has been stated:

"An alien plant also referred to as exotic, introduced, foreign, non-indigenous or non-native, is one that has been introduced by humans intentionally or otherwise through human agency or accidentally from one region to another. An alien plant that has escaped from its original ecosystem and is reproducing on its own in the regional flora is considered a naturalized species. Those naturalized aliens that become so successful as to spread in the flora and displace native biota or threatens valued environmental, agricultural or personal resources by the damage it causes are considered invasive."

(Invasive Alien species - ENVIS Centre on Floral Diversity bsienviis.nic.in/Content/InvasiveAlienspecies_15896.aspx?format=Print)

9. The report also states that there is no evidence that non-native species can be harmful to native biodiversity. This statement is false and the following extract is self-explanatory.

"Foresters, taxonomists and ecologists are now well aware of the problems caused by the invasion of exotic species into natural areas and the associated negative effects on global patterns of native biodiversity. Once established, some exotic species have the ability to displace or replace native plant and animal species, disrupt nutrient and fire cycles, and cause changes in the pattern of plant succession." (Reddy, C.S. & Bagyanarayana, G. 2008.p.3)

10. The report states that there are no acceptable list of non-native or invasive species. It is submitted that this is not true because all stakeholders are aware of the invasive nature and ill effects of alien tree species. The best example is the statewide removal of *Prosopis juliflora* based on the Hon'ble Court's verdict.

11. Furthermore, there are adequate scientific literatures available on the alien species' invasiveness and ill effects. Few examples are cited below :

M. Bhouthi R

- "It is realized that a legal and institutional approach to the country's biosecurity threat is a prerequisite to long-term success against introduction of invasive species. The government should strengthen its quarantine authority through new legislations which prohibits the introduction of alien species without an approved consent or permit. Also unauthorized introduction of wild and domesticated animals and plants into new areas, between states and within the country should be reviewed and monitored by several government departments, viz. Forest, Agriculture, Environment, Veterinary and Public Health." (Reddy, C.S. & Bagyanarayana, G. 2008.p.6)
- "Loss of habitat constitutes the greatest threat to the existence of biodiversity," The second worst threat is the biological invasion of exotic species (Convention for Biological diversity, 1992)"
- **Authors while listing the various threats faced by the endemic plants have included introduction of exotic species as one of the factors:** "The threat is perhaps due to various anthropogenic factors like indiscriminate felling of the plant species ,frequent summer fires,.....,**introduction of exotic species**, collection of plant parts in destructive manner for research purposes and herbal drug preparation by traditional practitioners and Pharmaceutical industries to mention a few."

They also have mentioned how the alien species displace the native ones. "In these disturbed conditions, **the recent immigrants from the other parts have found a good opportunity to outsmart the indigenous species.**"

(Chetty KM, Ramesh L, Ranjalkar KM.p.10) Chetty KM, Ramesh L, Ranjalkar KM, Manipal K. Flowering Plants of Chittoor District, Andhra Pradesh, India. 6th edn. 2019. 6:136-141

- Also the famous Tamil Botanist and writer Krishnamurthy "Invasion by alien species is now considered as one of the five major mechanisms involved in the environmental degradation of any area." (Krishnamurthy, K. V., R. Murugan, and K. Ravikumar. P.401) . The same concept was voiced by Diamond(1986) and Fitter(1986) Krishnamurthy, K. V., R. Murugan, and K. Ravikumar. 2014. Bioresources of the Eastern Ghats: Their Conservation and Management. Dehradun, India: Bishen Singh Mahendra Pal Singh.. by)(Also Krishnamurthy 2003)".

M. Ghanthi Raju

12. In the page 5. The report says that *Couroupita guianensis* are naturalized in India to such an extent that these trees are closely associated with religious practices. The report also give a definition for naturalization in the page 4: Naturalized species are alien species that sustain self replacing populations for several life cycles for a given period without direct intervention by people or despite human intervention. It is submitted that *Couroupita guianensis* cannot be considered as a naturalized species because there are no self replaced large populations of this species. Though the tree saplings grow from the seeds fallen around the tree, the tree is not found commonly in Indian landscapes as they are no "self replacing populations for several life cycles for a given period without direct intervention by people". This indicates that they are no "sustained self replacing populations for several life cycles for a given period without direct intervention by people or despite human intervention." This indicates that the tree population spreads only through human intervention and hence, it is not naturalized.
13. The report also relies on folklore and superstition to support its conclusion. The report states, "It is believed that hooded flower of *Couroupita guianensis* look like naga. And the plant is widely is grown in the temples of lord Shiva". It is submitted that, Yes, the hooded flower may look like a hood of a cobra and the tree is grown in the temples of lord Siva. However, as scientists and forest officers it is not fair to go by the looks as science tells us that it has nothing to do with the snake.
14. The report further states that the 13 species alleged as exotic in the petition are widely planted as avenue trees through the length and breadth of the country for their aesthetic and other values, particularly in the urban and other spaces. While this might be a different argument in the context of a small garden or along a highway etc, the question here is should a zoological park, plant these trees? . The petitioner strongly believes that a zoological park should promote native tree population and in the process native biodiversity. The proximity to the natural reserve forests is a factor that has not been considered – the propagation of some of these species to the reserve forests cannot be prevented. The report is silent on these aspects.

M. Ghorathi Rie

15. The report says that " *Bauhinia variegata* is planted widely and it is mentioned in the for Trees of Delhi: Field guide" While in page 5 the report says that *Bauhinia variegata* is planted, in Annexure II of the report it is listed as *bauhinia purpurea*. This is misleading and hence, the petitioner requests the Department to identify what species was planted. Once again, planting in delhi as avenue trees is different from planting it in a zoological park that was carved out of a reserve forest and adjoins a reserve forests.
16. The report thereafter states, "similar is the case with *Millingtonia hortensis* , the tress is widely grown in premises of the temple in Tamilnadu and the flowers are offered to the deities of lords in the temples." It may be true that the tree is planted in temples and its flowers are offered to deities, but this alone does not remove it from the list of Alien species.
17. For example, in a paper " Invasive alien plant species of Eastern Ghats of northern Andhra Pradesh" *Millingtonia hortensis* is listed as one the alien invasive species. (Maradana et al 428 - 432)
18. Shockingly at page 6, the report states thus,
- It is submitted that 'native species is good' and 'exotics are bad' is a confused and deceptive concept devoid of biological/ecological understanding with a sole aim to confer 'special value' on a species. Every species, irrespective of its status has an ecosystem function.
19. The above statement of the report is devoid of scientific evidence or data, especially to prove that "every species, irrespective of its status has an ecosystem function." **An exotic or alien or non-native species' function in a habitat where it does not belong is questionable.**
20. The committee further attempts to give the impression that there are no acceptable lists of non native and alien species. The statement cannot be accepted because the National Biodiversity Authority which comes under MOEF&CC, Government of India has released *Invasive Alien Species of India*. This scientific document in its page number 18 lists *Muntingia calabura* L. as **Terrestrial Invasive Alien Plant Species**. This species **confirms to all the Invasive attributes used to confirm the**

M. Bhanu Prasad

invasive status of the species reported in Indian ecosystems. The document also states that "it is based on the field observations by experts"(p.18).

21. So it can be inferred that **there are scientific documents available which are compiled by high level forest officers and researchers appointed by the Government the India** and also other similar scientific publications by experts of repute globally.
22. Further, *Spathodea campanulata* which is one of the exotic species planted at AAZP is listed one among the **100 of the World's Worst Invasive Alien Species** (www.iucngisd.org/gisd/100_worst.php)
23. Further, the report at page 6 and 7 states that the viewing of non-native species as invasive is a "generalist" view and that literature on this aspect is "scant". However, this assertion is false and there is adequate literature available on this subject. The following papers prove that the exotic species have adverse effects:

"They are capable of growing aggressively in diverse habitats dominating over native plants causing irreversible damage to the native biodiversity. They compete with the neighboring plants for space, food and water and finally eliminate them". (quoted in Raman, Vijayasankar & Kaliamoorthy, Ravikumar & Ravichandran, Perumal. (2011). *Plant Resources of Tiruvannamalai District, Tamil Nadu, India*.)

There are also several other books like: Krishnamurthy, Kulithalai & Murugan, Ramar & Kaliamoorthy, Ravikumar. (2014). *Bioresources of the Eastern Ghats: Their Conservation and Management*.

24. The committee thereafter frames the following question and attempts to answer the same with one specific species.

M. G. Senthil Kumar

(IV). Whether exotic species support local biodiversity and serve the natural purpose that native species will serve?

25. *Muntingia calabura* is used as an example on its uses list. But *Muntingia calabura* is listed in all invasive attributes in the invasive status of the species reported in Indian ecosystems under **Terrestrial Invasive Alien Plant Species** in the INVASIVE ALIEN SPECIES published by S.Sandilyan, Centre for Biodiversity Policy and Law (CEBPOL), National Biodiversity Authority, Ministry of Environment Forests and Climate Change, Government of India.

26. The committee thereafter under question No. 5 concludes that little information is available on the invasion of woody species and that introduction of exotics will not pose any threats. Both these assertions are untrue and the following scientific literature proves the same.

(V). Whether the 13 plant species alleged as 'exotics' will invade the surrounding areas and will pose grave threats in the future.

It is submitted that among the different life forms in the plant kingdom, there is little information available on trees or woody species possessing invasive characters both at global and national level. It is pertinent to mention that, all the 13 plant species alleged as 'exotics' in the present case are either trees or woody shrubs. Invariably, tree species are introduced from one geographical area to another mostly for the beneficial purposes owing to opening up of the economy, tourism and globalization.

27. It is submitted that adequate literature is available on Woody species invasion

a. "Provisional list of invasive woody plants in tropical and sub-tropical regions"(Pierre Binggeli et .al.,1998

Specie Name	Family	DI*
<i>Spathodea campanulata</i> Beauv.	Bignoniaceae	2

M. Blanthi

<i>Swietenia mahagoni</i> (L.) Jacq.	Meliaceae	2
<i>Terminalia catappa</i> L.	Combretaceae	2
<i>Psidium guajava</i> L.	Myrtaceae	3
<i>Cordia sebestena</i> L.	Boraginaceae	3
<i>Pithecellobium dulce</i> (Roxb.) Benth.	Mimosaceae	3
<i>Muntingia calabura</i> L.	Elaeocarpaceae	2

*Degree of invasiveness (DI): 1 = possibly/potentially invasive, 2 = moderately invasive, 3 = highly invasive

The above plants listed planted in "Provisional list of invasive woody plants in tropical and sub-tropical regions"(Pierre Binggeli et .al.,1998) are planted in Arignar Anna Zoological park. **Ref: Pierre Binggeli, John B Hall, John Robert Healey**(1998) An overview of invasive woody plants in the tropics.

- b. "Woody plants were not widely considered to be important invasive alien species until fairly recently. Thousands of species of trees and shrubs have, however, been moved around the world. Many species have spread from planting sites, and some are now among the most widespread and damaging of invasive organisms"(David M. Richardson and Marcel Rejmánek 2011). *Spathodea campanulata* Beauv, *Psidium guajava* L., *Muntingia calabura* L. were listed in page number 794, Table 2 **Ref:David M Richardson, Marcel Rejmánek**(2011) Trees and shrubs as invasive alien species—a global review.
- c. "The **woody flora** of the study area contains a rather high proportion of **alien species (38%)**. " **Ref:Taxonomic and biogeographic patterns in the native and alien woody flora of Kashmir Himalaya, India** 2010 (Anzar A. Khuroo, Ewald Weber, Akhtar H. Malik, G. H. Dar and Zafar A. Reshi)
- d. Khuroo et al. (2007) reported 571 alien species belonging to 352 genera and 104 families from the Kashmir Himalayan, their origins traceable from Europe, Asia and Africa. Negi and Hajra (2007) reported **308 woody** and 128 herbaceous exotic species from the Doon Valley of north-western Himalayan of which many are harmful invasives that Major Invasive Alien Plant Species in India (Sankaran et al., 2009) 5 have created several environmental, socio-economic and health problems **Ref:Invasive alien**

M. Blawathi Reshi

plant species in Punjab(Punjab ENVIS Centre NEWSLETTER Vol. 11, No. 4, 2013-14)

- e. From the study, it was found that 114 species (69%) were herbs followed by **trees with 23 species (14%)**, shrub 22 species (13%), climbers 5 species (3%), and under shrubs 1 species (1%). **Invasive Alien Flora in and around an Urban Area of Indian** August 2019 Samarendra Narayan Mallick, Nirius Xenan Ekka, Sanjeet Kumar and Sudam C. Sahu
28. The alien woody plant species if they spread will have an adverse impact on the economy. This impact may be direct as well as indirect. Especially the alien species will affect the biodiversity of the habitat initially and the nation.
29. "Invasive plants can alter plant community structure and ecosystem function (Vitousek et al ., 1987), result in large economic costs from lost ecosystem services (Pimentel et al ., 2005), and detract from an intrinsic or aesthetic value associated with native biodiversity and native plant dominance". (Herron Patrick M, Martine Christopher T, Latimer Andrew M, Young Stacey A. Leicht 2007)
30. Priority can be given to the native plants for educational and eco awareness to the public. As listed in appendix 1 (*Raman, Vijayasankar et al* 2011) there are lot of Potential avenue trees and Potential ornamental plants that can be encouraged.
31. The committee in response to question No. 6 framed by them states as follows

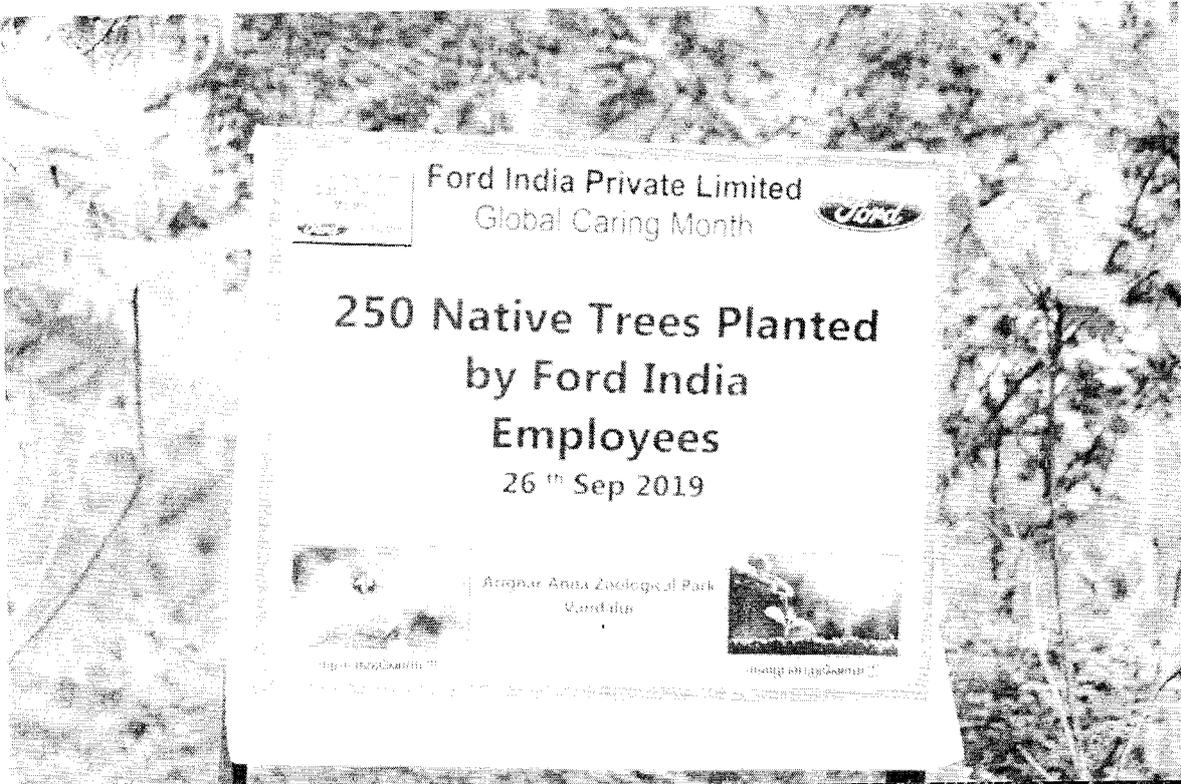
M. Blanthi Raja

The Joint Committee during the field visit did not see any instance of forests having been cleared to plant the non native species. Planting has been undertaken in the gaps and along the avenues. A few saplings of these 10 species have already come into flowering. There are no signs of invasive spread of these species in and around the area through dispersal. As against the 13 species listed out by the Petitioner as non native tree species only 10 species are not native to the Indian sub-continent. However these species were introduced in India in the distant past, based on a review of available literature. The said 10 species are now completely naturalized and have been planted across the country in gardens, parks, along avenues and have become mainstreamed or ingrained in the religion and culture of the country with popular vernacular names. In numerical terms, 1467 no of saplings of these 10 species have been planted which constitutes 4.85% of the total number of 30190 tree saplings planted.

32. It is submitted that although the plants flowered in its first year of plantation itself, **we cannot expect germination first year itself. The natural spread is a slow and long process. It can be learned from the past that it took decades for even the experts to realize the negative impacts of alien species.**

33. Though the report claims that there was no clearing done in the natural vegetation, the photographs taken during that period clearly shows the extent of clearing. The board kept also claim that the species planted are native trees. The entire exercise has been a CSR funded expedition with little thought paid to conservation.

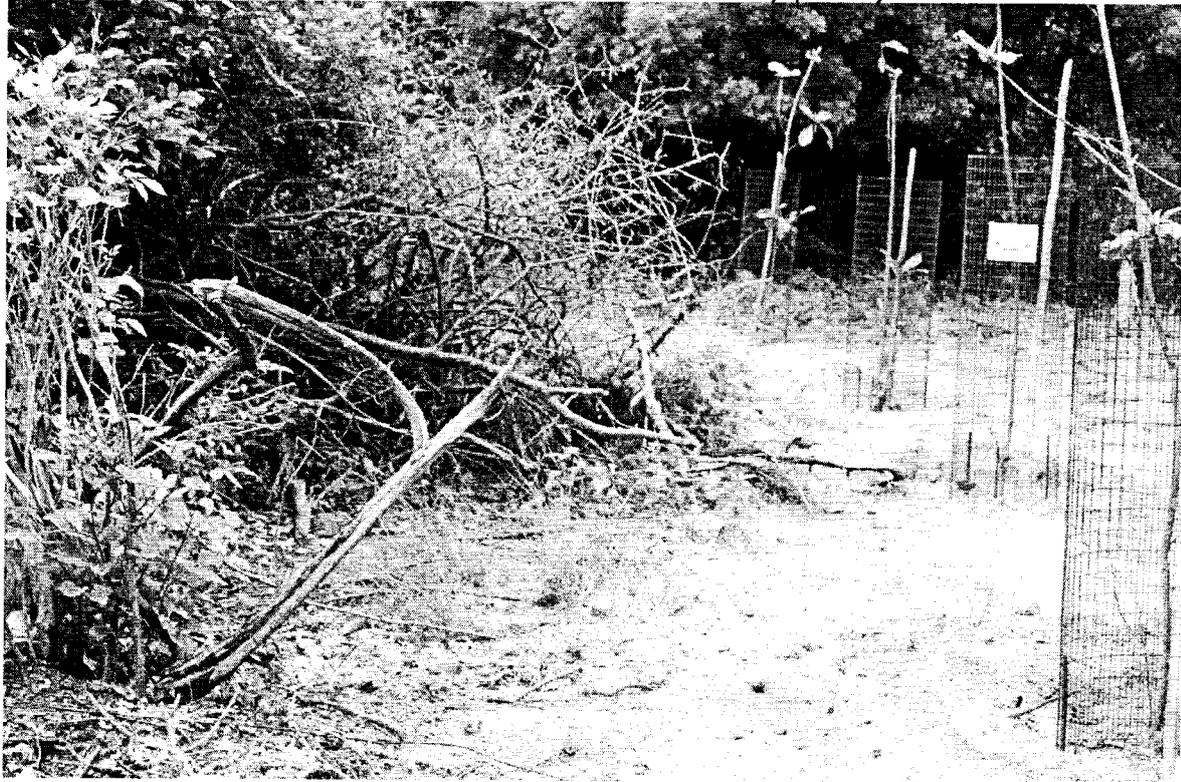
M. J. Hanthi R. J.



M. B. Laxmi Devi



(Clearing done using machineries like earth movers) pic. 1)



(Clearing done using machineries like earth movers) pic. 2)

M. Bharathi Reddy



(Clearing done using machineries like earth movers) pic. 3)

M. Bhanu Raja



(Clearing done using machineries like earth movers) pic. 4. The plantation area specifically has been cleared, which is evident from the thick vegetation seen in the fringes)

34. The clearings have been photographed with the date itself where the private car company name Ford is displayed. One can easily understand that machineries like earth movers were used to clear the ground. Cut, dried leftovers of the woody native species moved to the other side of the plantations were clearly seen in the images. **The issue with using machineries for plantations makes rare species become locally extinct.**

M. J. H. W. K.

35. For example *Amorphophallus sylvaticus* (Kattu Karunai), *Tacca pinnatifida* are missing in Vandalur and surrounding area as observed by botanist Dr D Narasimhan, an expert in plant taxonomy. "The retired professor of Madras Christian College who is now assisting the state forest department in its maiden tree census programme is also worried that another plant *Tacca pinnatifida* earlier reported from Vandalur too can no longer be spotted. "Sightings of *Pinnatifida* has not been recorded in the recent past except for one sporadic sighting in Ponmar reserve forest in Kancheepuram and there is an immediate threat for at least half a dozen tree and plant species facing local extinction in Chennai," Narasimhan said." Another tree *Gardenia latifolia* being refuged at Vandalur ZOO: "Another tree which was once common in Chennai is *Gardenia Latifolia* (Kambi Maram) scattered across hillocks and forest patches in Chennai, but is now a refuge in Vandalur zoo," added Narasimhan. Ref <https://www.dtnext.in/News/City/2018/10/07055606/1091276/Plants-with-medicinal-value-once-endemic-to-the-city-.vpf>

36. Ground orchids like *Habenaria roxburghii* and *Eulophia graminea*, *Eulophia epidendreae* are in trouble when used bull dozer for clearings whether it is Operational area or Natural vegetation area. This orchid has very low germination rate.

37. The Vandalur scrub forest is the original natural forest of this area as indicated by veteran forester J.S. Gamble in the 1900s. The flora of Vandalur scrub forests mainly consists of shrubs and thorny small trees, with many herbaceous plants. Ground orchids and delicate tiny plants are the characteristic features.
Ref: <https://www.thehindu.com/news/cities/chennai/scrub-forests-regain-sheen/article3255335.ece>

38. References to the articles, books and publications mentioned above are provided below and in appendix below, a potential list of trees to replace the alien ornamental trees have been provided. This is in tune with the management plan of the zoo, which mandates that exotic species should be replaced with native species.

M. Bhanu Prasad

Solemnly affirmed at Chennai]
on this the 19th day of September 2021]
signed her name in my presence]

BEFORE ME
ADVOCATE, CHENNAI

Reference

- dtnext.in/News/City/2018/10/07055606/1091276/Plants-with-medicinal-value-once-endemic-to-the-city-.vpf)
- David M Richardson, Marcel Rejmánek(2011) Trees and shrubs as invasive alien species—a global review.
- Diamond, J. (1986) The design of a nature reserve system for Indonesian New Guinea. In *Conservation Biology: the Science of Scarcity and Diversity* (M.E. Soule, ed.) pp. 485-503. Sunderland, Massachusetts: Sinauer Associates.
- Fitter, R. (1986) *Wildlife for man: how and why we should conserve our species*. London: Williams Collins and Co Ltd.
- Invasive alien plant species in Punjab(Punjab ENVIS Centre NEWSLETTER Vol. 11, No. 4, 2013-14
- Invasive Alien species - ENVIS Centre on Floral Diversity bsienvs.nic.in/Content/InvasiveAlienspecies_15896.aspx?format=Print
- Mallick, Samarendra & Ekka, Nirius & Kumar, Sanjeet & Sahu, SUDAM. (2019). Invasive Alien Flora in and around an Urban Area of India. [10.5772/intechopen.88725](https://doi.org/10.5772/intechopen.88725).
- Maradana, Tarakeswara & Kumar, Omraj & Venkaiah, M. (2015). invasive alien plant species in tropical forests of eastern ghats in northern andhra pradesh, india. *Indian forester*. 141. 428-432.
- nbaindia.org/uploaded/pdf/Iaslist.pdf
- Patrick M. Herron , Christopher T. Martine , Andrew M. Latimer and Stacey A. Leicht-Young Diversity and Distributions, (*Diversity Distrib.*) (2007) 13 , 633–644
- Pierre Binggeli, John B Hall, John Robert Healey(1998) An overview of invasive woody plants in the tropics.
- Raman, Vijayasankar & Kaliamoorthy, Ravikumar & Ravichandran, Perumal. (2011). *Plant Resources of Tiruvannamalai District, Tamil Nadu, India*.

M. Bhanu Raje

- Reddy, C.S. & Bagyanarayana, G. 2008. Invasion of Exotic Species: Threat to the Biodiversity. Proc. Natl. Sem. Conserv. Eastern Ghats
- Reinhardt 1863). (indiabiodiversity.org/species/show/283032)
- Richardson DM (1998). Forestry trees as invasive aliens. *Conser. Biol.*, 12: 18-26.
- Richardson DM, Pysek P, Rejmánek M, Barbour MG, Panetta FD, West CJ (2000). Naturalization and invasion of alien plants: Concepts and definitions. *Diversity Distrib.*, 6: 93-107.
- Richardson DM, Williams PA, Hobbs RJ (1994) Pine invasions in the Southern Hemisphere: Determinants of spread and invadability. *J. Biogeogr.*, 21: 511-727.
- Samarendra Narayan Mallick, Nirius Xenan Ekka, Sanjeet Kumar and Sudam C. Sahu (August 26th 2019). Invasive Alien Flora in and around an Urban Area of India, *Diversity and Ecology of Invasive Plants*, Sudam Charan Sahu and Sanjeet Kumar, IntechOpen, DOI: 10.5772/intechopen.88725. Available from: <https://www.intechopen.com/books/diversity-and-ecology-of-invasive-plants/invasive-alien-flora-in-and-around-an-urban-area-of-india>
- thehindu.com/news/cities/chennai/scrub-forests-regain-sheen/article3255335.ece
- Raman, Vijayasankar & Kaliamoorthy, Ravikumar & Ravichandran, Perumal. (2011). *Plant Resources of Tiruvannamalai District, Tamil Nadu, India*.
- David M Richardson, Marcel Rejmánek(2011) Trees and shrubs as invasive alien species—a global review

Appendix 1

Potential avenue and ornamental trees that can be alternatives for the existing alien species :

The below lists is obtained from book *Plant Resources of Tiruvannamalai District, Tamil Nadu, India* Raman, Vijayasankar & Kaliamoorthy, Ravikumar & Ravichandran, Perumal. (2011).

M. Senthil Raj

Potential Avenue Tree Species:

Species Name
Buchnanian lanzan
Buchnanian axillaris
Careya arborea
Celtis phillipensis var.wightii
Diospyros ferrea var.buxifolia
Drypetes roxburghii
Ficus arnottiana
Ficus drupacea var.pubescens
Gardenia latifolia
Gardenia resinifera
Gardenia gummifera
Gmelina arborea
Haldina cordifolia
Kydia calycina
Mitragyna parvifolia
Murraya paniculata
Ochna obtusata
Pamburus missionis
Spondia pinnata
Premna serratifolia
Psydrax dicoccus
Pterospermum suberifolium
Pterospermum xylocarpum
Pterospermum acerifolium
Shorea roxburghii
Soymida febrifuga
Terminalia paniculata
Terminalia chebula
Terminalia bellerica
Terminalia crenulata
Trichilia connaroides

Potential ornamental plants:

M. Bhanthi Riz

Species Name
Barleria spp.
Bouchea hyderabadensis
Caralluma spp.
Caryota urens
Ceropegia spp.
Clerodendrum serratum
Cochlospermum religiosum
Crateva spp.
Crinum asiaticum
Cymbidium aloifolium
Dolichandrone atrovirens
Dolichandrone falcate
Ecbolium viride
Ehretia spp.
Firmiana colorata
Geodorum densiflorum
Habenaria spp.
Helicteres isora
Hibiscus eriocarpus
Justicia betonica
Mundulea sericea
Pavetta indica
Rhaphidophora pertusa
Senna Montana
Stenosiphonium russellianum

M. Bhanu Hari