

Ancient Landscape Groves of India: The Case of Nallur Thopu, Devanahalli, Bangalore, India

Raj K Meghana¹, Rao Rajshekhar²

MS Ramaiah Institute of Technology,

Department of Architecture,

Bangalore; India

Meghana K Raj: E Mail: meghanakraj@gmail.com

Abstract

Sacred groves are pristine forest fragments that have cultural and spiritual significance for the people living in the vicinity. The Nallur Tamarind Grove identified as a sacred grove is a relic of the Chola dynasty situated in the Nallur town 40 km away from the Bangalore city. The tamarind trees found in this grove are unique as they have hallowed trunks, prop roots and gnarled branches that are large enough to accommodate an adult. They branch out into a new tree before shedding their old trunk and amongst them is an old patriarch tree which is four hundred and ten years old. These ancient trees bear fruits of different color and taste; while some are sour, some are sweet. These trees are endemic to this site and their genes need to be preserved and conserved.

A preliminary survey was done to document the grove's origin, history, site details, vegetation, the customs and traditions followed here. A systematic method was followed to locate the trees on the site, measuring their height, girth, branching pattern, foliage density, leaf features, other flora and fauna. The association of people with the grove was documented. This helped to understand the inception of this grove, its heritage value, and the role in conservation and relevance today. It was observed that this grove is subjected to anthropogenic pressure, vandalism, misuse and neglect. Hence, a proper management plan to accommodate the local people, to manage the crowd during the festivals is very essential to protect this grove.

Keywords: Nallur Thopu, Tamarind Grove, Gnarled, Endemic, Anthropogenic

1.0 Introduction

Sacred groves in India are pristine forest patches with endemic species of flora and fauna protected by the surrounding communities because of their cultural and religious beliefs. It is believed that the "Presiding Deity" protects them from calamities and so a patch of land is dedicated to the Deity. While most of them are associated with the Hindu God, sacred groves of other religions like Islam, Buddhism and folk religions are also present. Religion being a powerful instrument for convincing people has always been used for meeting the desired objectives of the society. Besides India, sacred groves occur in other parts of the world and they represent the symbiotic relationship between Man and Nature. Sacred groves represent the earliest form of Nature worship and the oldest method of forest conservation. They were the earliest form of "conservation practices" protecting water, flora and fauna besides nurturing cultural and religious practices.

Sacred groves are seen all over the country but known by different names. They are:

Sl. No.	Name	Location/Place
1.	Than, Madaico	Assam
2.	Matagudi, Devagudi	Chhattisgarh
3.	Devvan	Himachal Pradesh
4.	Jaherthan, Surana	Jharkhand
5.	Devarakadu or Kans	Karnataka
6.	Kaavu	Kerala
7.	Devrai	Maharashtra
8.	Gamkhap	Manipur
9.	LawNiam	Meghalaya
10.	Jahera	Orissa
11.	Orans	Rajasthan
12.	Kovilkaadu	Tamil Nādu
13.	Devvan	Uttarakhand
14.	Jahiristhans	West Bengal

Table 1: Categories of the types of trees and their quantity Source: (21)

The sacred groves found in India are classified into three categories based on analysis of studies on sacred groves:

1. Traditional sacred groves
2. Temple groves and
3. Groves around the burial or cremation ground (The Northeast Today,2017)

In India there are many sacred groves with *Tamarindus indica* being one among the many trees found but there are only few groves with *Tamarindus indica* grown exclusively. The indigenous communities of Orissa and Bihar worship the Tamarind tree and all the groves present have their own myths and stories. The tamarind tree grove in Kuilapalayam, Tamil Nadu and Imli Garden in Mothala Village, Abdasa, Gujarat are all examples of it. Indian Sacred Groves have a Pre Vedic origin and they are associated with indigenous communities who believe in “Divinity of Nature”, “Nature Worship” and Natural resources. Groves are repositories of rare and endemic plants and animals and a natural Gene Pool hence having ecological, economic, commercial, socio-cultural and religious values. Studies have shown that the restriction in resource usage, undisturbed condition and suitable microclimate are the primary factors for species richness. Highland Groves (Western Ghats and Himalayas) are important for their soil and water conservation activities which are beneficial for the local inhabitants in terms of less soil erosion, preventing flash floods, and supply of water in the lean season. They help maintain the water table and attract rainfall. Groves also provide water which are rich in nutrients to the agricultural fields and spice gardens. The economic value includes non-timber forest products that serve as valuable resource for local communities. Today, groves are a representation of islands of native vegetation amidst the heterogeneous landscape that provide shelter to various fauna during their foraging activities.

Tamarind Biodiversity Heritage Site at Nallur in Devanahalli Taluk, Bangalore Rural District is popularly believed to be a relic of the Chola Dynasty that ruled nearly 800 years ago. It is spread over 54 acres comprising a population of nearly 300 trees and is a picture of dynamic pattern of plant diversity. The significant component of this popular structure is a group of old trees standing like ageless sentinels, firmly rooted in the ground with their gigantic trunks together with large picturesque crowns spread very high. The age of the trees has been established through carbon dating process that some of them are more than 400 years old. (Nagendra,201). This firmly establishes the ancient nature and the heritage value of the site. The produce of this grove is collected and annually auctioned off to the highest bidder which is eventually sold in the markets.

1.1 Aim

This paper aims to document Nallur Tamarind grove through a landscape approach by observing, measuring, siting, photographing and studying the features of the indigenous tamarind trees seen here along with other flora and fauna found in this grove.

2.0 Literature Review

A lot of the research is done worldwide on cataloging the Sacred Groves, its flora and fauna, vegetation composition to help in the conservation of the plant species, approaches for the conservation of medicinal and aromatic plants. The ecological status of sacred groves and their role in biodiversity conservation is researched but from a botanical or horticultural point of view. The threatened, endangered and vulnerable plant species are studied and recorded and the degradation of the groves due to anthropogenic activities has been studied. The Nallur grove has also been studied or presented from a botanical perspective and from a traveler's point of view through blogs, articles and posts. The Karnataka Biodiversity Board has conducted research to establish the age of the trees, find peculiar features, complex biodiversity of this grove and establish the heritage value of the site. They have conducted phenological studies, both at vegetative and reproductive phases to unravel the pattern of diversity and Molecular marker (RAPD) analysis to establish the genetic diversity of the genotypes. A study of this ancient grove through landscape approach has not been conducted and we have attempted to do this.

3.0 Research Methodology

The findings are based on literature research and field research. Information was collected through Primary sources by way of Interview, Field survey, Photographs, audio recordings and blogs. Ten people were identified who work on site or use the site's resources to collect information.

The field survey was done to document the trees, fauna, other flora, water resources etc. that is seen inside the grove and the tree were documented as follows: The tree species that is seen predominantly on site was identified, they were marked with a number and a sketch of the tree to be documented was made. The tree was photographed to study the branching pattern and the leaves. At a height of 1m the girth of the tree was measured and noted along with the age of the tree. In some trees where prop roots were seen and identified a plan was made for the same to study the spread of the prop roots. The following heights were measured with respect to a person standing next to it head room height, canopy height and the full height of the tree. The spread of the canopy was measured as follows; two people stood under the tree where the canopy starts and ends (i.e., on opposite sides) and the distance between the two people was measured using measure tape. The density of the tree and its shadow pattern was

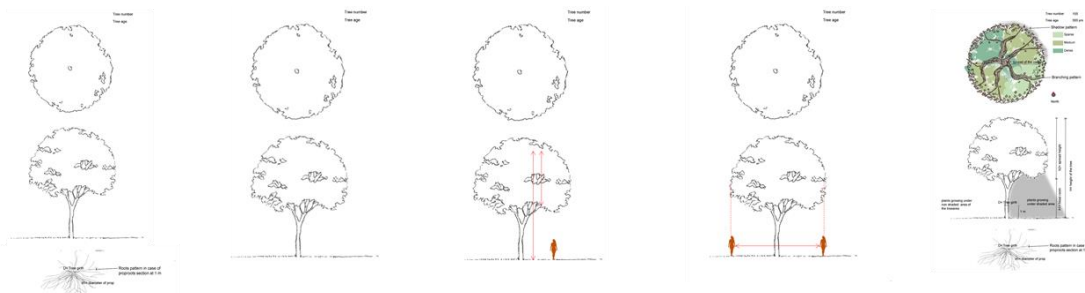


Fig. 1: Images showing the sequence of Research Methodology Source: Authors

noted, sketched to documented. A typical sample tree was chosen and its leaf structure was noted through the study of a single leaf a cluster of leaves, its fruit, flower, bark texture was also documented. Any disease found on tree like termite attack were taken note of and all the plants growing under tree were noted. The association with other fauna, fauna dependent on the fallen tamarind fruits, people their association with the grove were also noted.

The study area is a thick grove in Devanahalli taluk of rural Bangalore predominantly consisting of *Tamarindus indica* belonging to the Fabaceae family and their common names are Tamarind, Tamarindo, Tamarin, Sampalok, Amlı (in Bengali), Imli (in Hindi), Puli (in Tamil), Cinta (in Telugu), Chinch (Marathi). It is revered as a sacred grove by the locals as it is believed to exist from the 12th century AD and that these trees came to the rescue of their ancestors. The grove has been studied and analyzed through primary and secondary data to understand its role in the present times and to understand its historical, cultural, social, economic and ecological values. A preliminary survey was done to locate people who are regarded as well-versed in local history, tradition, customs and this information was collected and recorded. The unique features of the plants on site were studied and recorded and other information was gathered through the guard, locals and other informants. A visit to this grove was undertaken and exploration was carried out during the month of October 2019 and field observation helped us to identify the Plant specimens on site. The data observed and collected on the site has been recorded.

Documentary study of the groves through papers and reports from various departments, organizations were studied (listed in the References). Interviews of ten locals who worked on site like the priests, security guard, locals who use the site for grazing and other village people were conducted based on information gathered about the history and existence of the grove were noted, oral histories were recorded and then documented. Plant specimens were identified through books, reports and online literature. During Field Study, data and observations were noted down, recorded through photographs and voice recordings on the 24th of October 2019.

4.0 Study Area

Nallur is a small village or hamlet in Devanahalli Taluk in Bangalore Rural District of Karnataka State, India between 13deg 11' and 77 deg 44'. It comes under Nallur Panchayat and belongs to Bangalore Division. It is located 9 KM towards the South from the District headquarters of Bangalore, 8KM from Devanahalli, 36 KM from State capital Bangalore. The macro climate here is tropical.

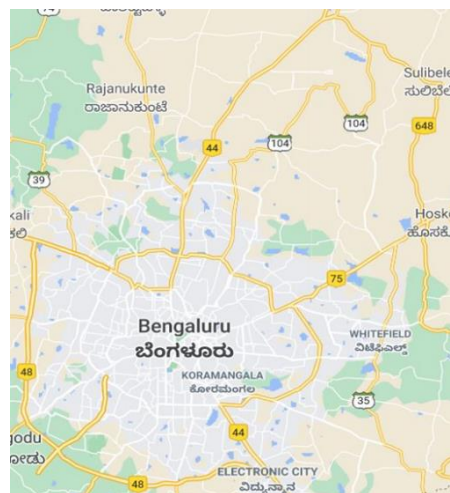


Fig. 2: Map showing the location of Nallur Tamarind Grove. Source: authors



Fig. 3: Map showing the layout of Nallur Tamarind Grove. Source: PG Studio 2018 batch

The summers are much rainier than the winters in Bengaluru. This climate is considered to be Aw according to the Köppen-Geiger climate classification. The temperature here averages 23.6 °C. in a year and the average rainfall is 831 mm. The type of rock found on site is Peninsular Gneiss and the type of soil is red soil derived from the residual products of granites and gneisses. They are light textured, varying from sand or gravel to loams and are highly leached. The red color is due to the presence of iron, poor inorganic content and plant nutrients. Red soils have good water-holding capacity. These are relatively more permeable than black soil and have good infiltration capacity.

During the 15th century, some refugees who were fleeing Kanchipuram took refuge at the foothills of “Ramasami Betta” which is to the East of Nandi hills. Their leader Rana Baire Gowda was directed in his dream to set up a village in this area and this Morasu Wokkalus family settled down in a village called Ahuti now called Avati. Malla Baire Gowda who was his son founded Devanahalli, Doddaballapura and Chikkaballapura. He initially constructed the mud fort in 1501 AD during the Vijayanagara period. In 1747 AD, the fort was taken over by the Wodeyars of Mysore under the command of Nanja Raja and it was later conquered by the Marathas and eventually came under the control of Hyder Ali and Tipu Sultan. (Devanahalli Fort, n.d.).



Fig 4: Image showing the plant species of Nallur Tamarind Grove.
Source: Authors

4.1 History of Nallur Tamarind Grove

This grove at Devanahalli comprised of a fort and was ruled by the Chola dynasty when Rajendra Chola- III ruled it about 800 years ago. The Princess wanted to marry the Prince of Dalikote and she had the consent of the Queen but the King was not happy with the alliance and opposed it. Thus, the Prince of Dalikote laid siege to the place for a week but was unable to enter the fort. There was a tank outside the fort which was the only source of water to this kingdom. The princess sent a note to the Prince of Dalikote in which she revealed the details of this tank and asked him to identify the source of water by throwing a few petals. She directed him to drain the tank and dig a tunnel to enter the fort as she wanted the prince to conquer her father's kingdom and get married to him. Since this was the only way to enter the fort, the prince followed the instructions and the army invaded the kingdom. The King sensed danger beforehand and buried his treasure with tamarind seeds as markers and it is believed that it is those seeds that have grown into these tamarind trees and hence thieves come looking for treasure. These tamarind trees are unique to this site with unique characteristics and help retain soil moisture, prevent soil erosion and is used for grazing by the locals. People also have a sentimental value towards this grove as they believe that generations ago, when the war was fought, there was no water and these tamarind fruits were used to feed the people and so they revere it. (wgbis.ces.iisc.ernet.in, n.d.).

Hence, these trees have to be protected. There is a guard stationed by the Forest Department but people do illegally enter the premises and misuse this place.

4.2 History of temples in the Grove

Nallur had two temples within this ancient and mysterious grove and according to the legend, the Queen of Devanahalli got the Gangamma temple built during the drought in the area to invoke the blessings of River Ganga. The old Gangamma temple is completely lost and it is now renovated by the surrounding villages. The renovation work began in 1999 and was completed in 2014 without leaving any trace of the original temple. However, the old deity is still housed inside the temple.



Fig 5: Images showing the Gopura, Stambha and the front facade of the Gangammadevi temple.
Source: Authors

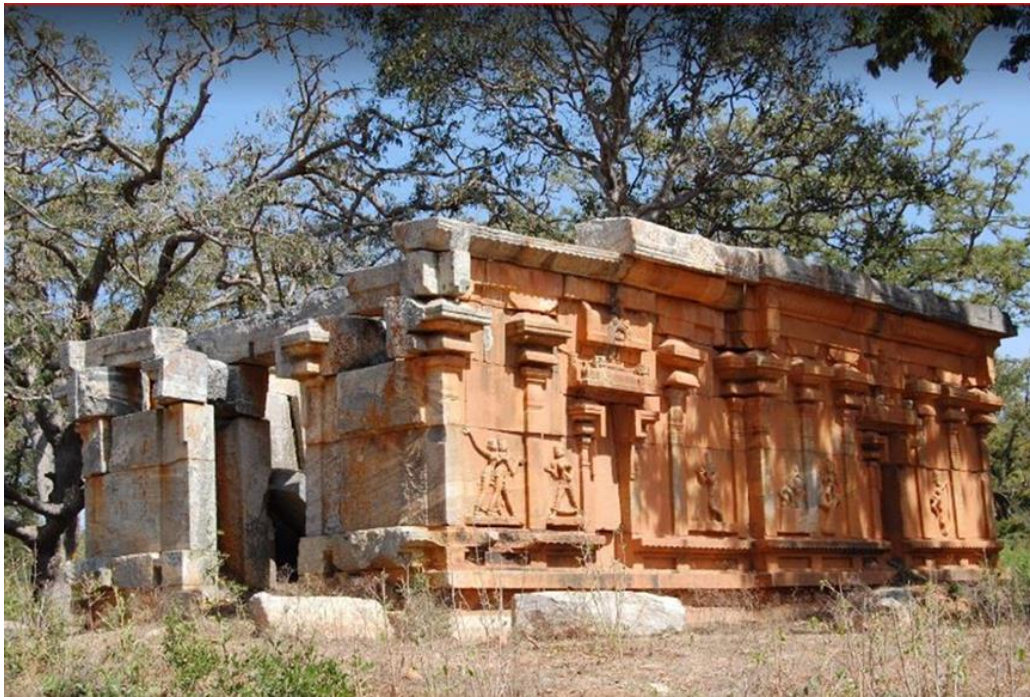


Fig 6: Images showing the Chennakeshava temple.
Source: Author

The other temple seen in the grove is the Chennakeshava temple built in Vijayanagara style hidden behind scrub vegetation about half a kilometer away from the access road. It is also known by the name of Gopala Swami temple and is a beautiful ancient temple but no inscriptions are found in the temple. Neither do inscriptions nearby refer to its construction. It is made of stone and the pillars are carved out of solid stone blocks that are wedged together with exquisite craftsmanship. This temple has not been used for worship in years and is in ruins. Some of the relics have been stolen. A relatively new headless stone Goddess which is in Vijayanagar style is lying on the ground. The temple walls depict episodes from Krishna's life. One panel shows Krishna doing the "Raas Leela" (a dance form that Krishna performs with Radha and Gopikas) in which her hair and attire have been sculpted in great detail. Another panel shows two gopikas (milkmaid) in water begging for their clothes from a naughty Krishna who is sitting on a tree and is enjoying their plight while another shows the famous "Kalinga Mardana" (Krishna's victory over the snake Kaliya). (Deccan Herald, 2009).

4.3 Pond in the Grove

It is observed that there is a pond inside the grove and this pond was created to meet the water demands of the people in and around the Nallur village. The queen of Devanahalli fort got this pond built and it is connected with the Chikkaballapura lake through underground channels. This pond was also the only other way to get inside the fort other than the main entrance. Thus, when under siege the enemies infiltrated the fort, destroyed it and the water channels. Presently this pond has two inlet gutters to collect the surface runoff and helps to recharge ground water.



Fig 7: Images showing the pond in the grove.
Source: Author

4.4 Traditional beliefs and Taboos

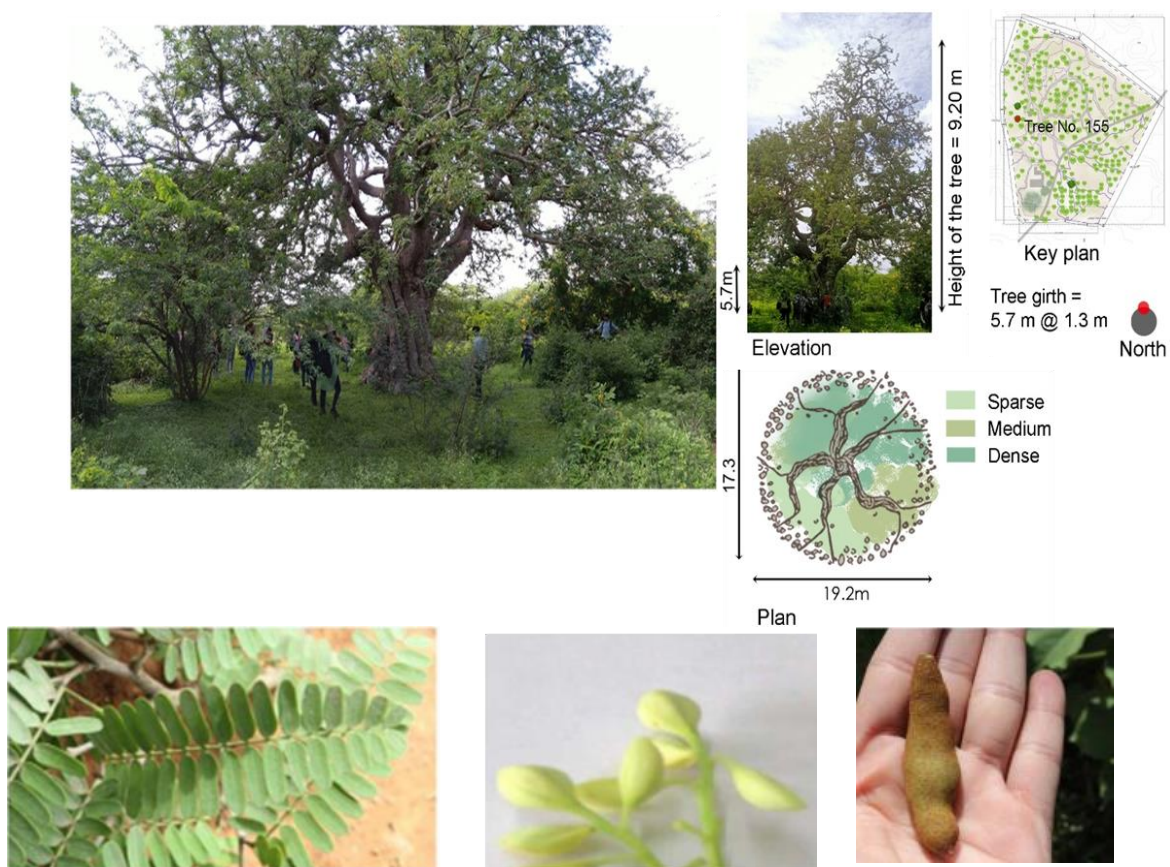
The grove is believed to be sacred by the surrounding villagers and they use resources from this and hence it is revered and protected. The Gangamma temple is on the periphery and has been reconstructed by the surrounding twelve villages. An annual festival at the temple draws a large crowd and a part of the grove was cleared to be used for parking and other activities. The Chennakeshava temple located inside the grove is dilapidated and lies in neglect with the relics of this temple strewn around. Before 2007, it was under the village Panchayat and since this grove was worshipped, it was well maintained. However, in 2007, Nallur Tamarind grove was declared as a Heritage Bio-diversity Site. It is now being maintained by the Forest Department. It is believed locally that if anyone takes anything from the grove, an evil spell is cast on them thus also protecting the grove from being exploited. (Raj, M. (2019).

5.0 Observations

The vegetation is mainly *Tamarindus indica* and these trees are sparsely located in a grid pattern. There is other vegetation found on the site and few of them are invasive which is a threat to the grove. It is observed that on the site, there are tamarind trees that are more than 400 years old as well as young trees which are just about seven years old. A total of 278 plants were enumerated and labelled by the University of Agricultural Sciences, Bangalore in April 2009. The trees were classified into 3 categories such as:

Sl. No.	Type	Numbers
1	Old Trees	18
2	Middle aged/ Young trees	234
3	Clones	26
	Total	278

Table 2: Categories of the types of trees and their quantity
Source: Author



Type 1: Old Trees: Tree No. 155 - Sample Tree Number

Sample tree under each category was measured and documented. This is a four hundred and ten years old whose height is 19.5m and a girth of 1.3m at a height of 7.46 m. The Canopy Spread is 11.9m and the branching pattern is as shown below

Fig 8: Image showing the Sample tree numbered as 155, its height, girth, branching pattern

Fig 9: Image showing the leaves, flower and seed of the tree numbered as 155.
Source: Authors

Type 2: Middle age /young trees: Sample Tree Number 1 – Tree number 156

These trees still haven't achieved any distinct or unique characteristics as the old trees but they can be classified as Mono trunk, Double trunk, Triple trunk and one tree with a wedge trunk where another trunk is seen along with the main trunk. The different crown characters seen here are Dome, Oval, Circle, Semi circle, Cone and predominantly Irregular and spreading. There is a possibility that this crown character could be inherited from the older trees found here. The ideal branching in tamarind tree is supposed to be multiple branching originating from a meter high above the ground level but here we can see

- i) Multiple branches originating from the ground level
- ii) Branching from the ground level as well as subsequently from higher levels too.
- iii) Two branches from almost the ground level and subsequent branches from a fairly higher level
- iv) Multiple irregular branching
- v) Multiple branching from a point on the trunk at a fairly higher level on the trunk.

The foliage characters seen here are

- i) Dense and dark green
- ii) Sparse and dark green
- iii) Dense and light green and
- iv) Sparkle and light green.

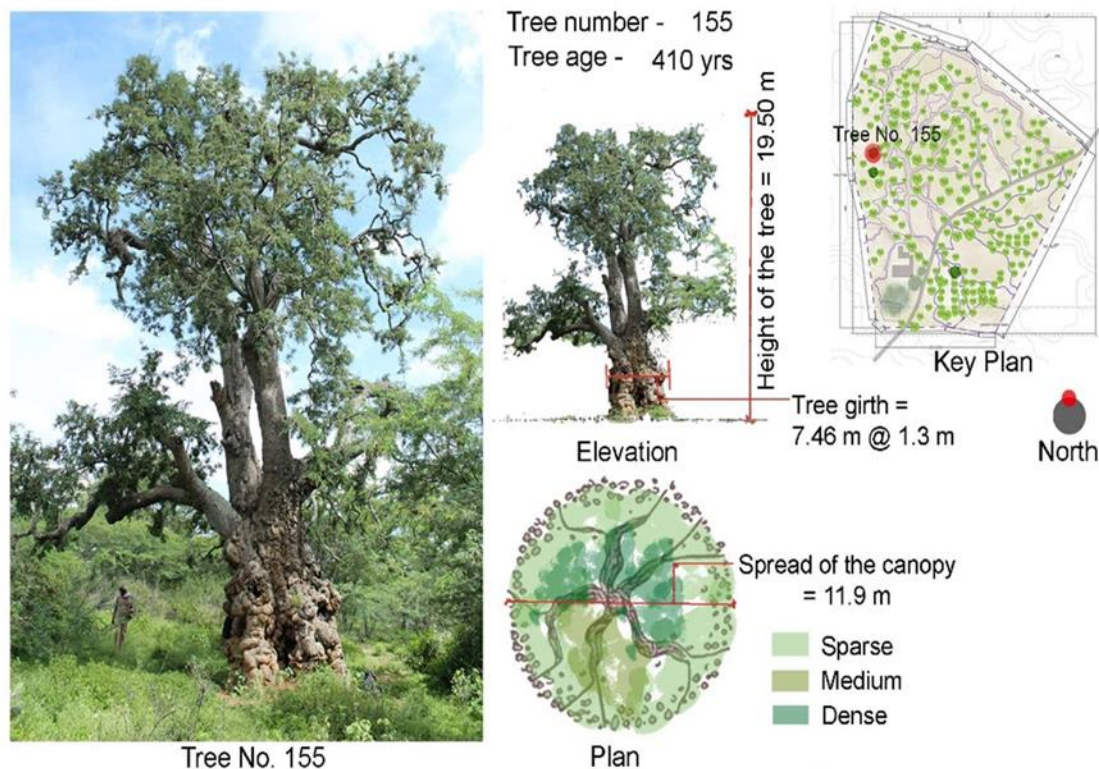


Fig 10: Image showing the Sample tree numbered as 156 showing its height, girth, its branching pattern
Source: Author

Leaves are generally pinnately compound and leaflets opposite each other. But leaflets keep open during the day and close as the day light fades out. But in this case two types of trees could be found, one fall in line with the general and known pattern. Where as in some trees, the leaflets remain closed throughout during the day and night irrespective of the light or no light. This shows that there could be some genetical changes amongst the trees found here.



Fig11: Image showing the leaf, flower and fruit numbered as 156.

Source: Authors

Type 3: Clones: Sample Tree Number 1 – Tree number 118

Tree Number – 118 is three hundred years old and is the second oldest tree here. The main trunk was cut at ground level and it has only some tissues now but it is survived by seven of its clones today and a girth of 1.3m at a height of 7.46m. The Canopy Spread is 11.9m and the branching pattern is seen below



Fig 12: Image showing the Sample tree numbered as 118 showing its character, spread and its branch

Source: Author

6.0 Results and Discussion

The paper highlights the importance of ancient sacred groves and the reasons why it needs to be protected. During the site visit, it was observed that the predominant species seen in this grove is Tamarind and hence the grove is named after it. The other plant species seen here are *Abutilon indicum*, *Cordia obliqua*, *Ficus racemose*, *Ficus religiosa*, *Lantana camara*, *Prosopis juliflora* and *Commelina communis*. Among the old trees, one tree (Tree no. 37) was uprooted by heavy gales and rains but is now survived by one clone (proxy mother). Tree no. 118 was cut at the ground level some time ago leaving some tissues however, it is now survived by 7 clones. Tree no. 152 also has lost its main trunk but the callus formed, perhaps from the trunk has developed into a peculiar (curious) structure and is now represented by a clone passing through the callus. The trunks are very big and, in some cases gigantic with

either smooth or rugged or freckled surfaces with dirty brown to grey colors. (solid and hollow trunks). Surface of the solid trunks had become rough and rugged, form a picturesque furrows and ridges or turned out twisted into knots of various shapes and sizes (Tree nos.159, 161, etc.) and other inexplicable shapes. The trees with certain peculiarities have been mapped; out of which, 5 have been documented and studied. This grove is a repository of local biodiversity hence plays a significant role in conserving ecology. According to the IISc newsletter there are 65 species of fauna like slender loris, pangolins, porcupines etc. and has five varieties of owls and other avian species. The site is of heritage value and the Govt. of Karnataka has declared this as a “Heritage Tamarind Biodiversity Site”. This huge collection of ancient trees whose age has been established through carbon dating is of an indigenous variety whose gene must be preserved. People’s faith and belief in tradition and customs has also helped to protect the grove. During the annual festival there is a heavy tourist inflow and, in an effort, to accommodate the crowd some trees were cut to make way for parking which has caused considerable damage to the grove and this must be checked.

6.1 Threats to the Grove

- Urbanization and change in the belief system have led to division of the grove.
- Destruction of the groves by cutting trees to make way for infrastructure and development
- The division of Groves into smaller and isolated “Patches” to accommodate people and infrastructure.
- The small temple inside the grove is replaced with large concrete temples with elaborate rituals causing damage to the groves.
- Rampant grazing has led to destruction of the grove in certain pockets and many of the trees have hollowed trunks.
- Invasive species of plants have taken over some parts of the grove and termites have rendered some trees completely hollow.
- Misuse, vandalism, theft due to lack of people to maintain and guard the place

Conclusion

In the words of Dr. M.S. Swaminathan, “Unlike a botanical garden, where a wide range of trees and plants are collected and cultivated for the purpose of our education and enjoyment, the sacred groves are one method of expressing the gratitude of human beings to the trees which sustain and support life under a given agroecological condition”. This grove also is an integral part of the socio-cultural life of Nallur and the surrounding villages besides having economic and ecological importance and hence this needs to be conserved. The natural balance between resource usage and its conservation is disrupted and hence newer approaches has to be applied to restore it. Many of these ancient trees are surviving till date due to the taboos, sacred belief and worship. But the influx of tourists during the car festivals needs to be managed efficiently to prevent damage and destruction of the grove. A landscape perception of the people will help to strengthen community level awareness, active participation by local and regional governing bodies and in the conservation of the indigenous species and habitat conservation.

References

- Harini Nagendra (2019). Nature in the city: Bengaluru in the past, present, and future. New Delhi, India: Oxford University Press.
- Research Finding into the peculiar features and the complex Biodiversity in the Tamarind grove (Heritage Site) at Nallur Village. (2008). [online] www.kbbindia.org. Available at: <https://kbb.karnataka.gov.in/storage/pdf>.
- Fruitipedia.com. 2018. TAMARIND *Tamarindus indica* | Fruitipedia. [online] Available at: http://www.fruitipedia.com/2018/12/tamarind_tamarindus-indica/ [Accessed 28 October

- 2021]. Trivedi, P., 2009. Medicinal plants. Jaipur, Raj., India: Aavishkar Publishers, Distributors. òDhere, R., 2011. The rise of a folk god. New York: Oxford University Press. Cpreecenvi.nic.in. 2021. [online] Available at: <http://www.cpreecenvi.nic.in/Database/SacredNaturalSitesofGujarat_3671.aspx?format=Print> [Accessed 28 October 2021].
- Trekearth.com. 2021. India. [online] Available at: <https://www.trekearth.com/gallery/Asia/India/South/Tamil_Nadu/photo893365.htm> [Accessed 28 October 2021].
- Wildsingapore.com. 2021. Asam or Tamarind tree (*Tamarindus indica*) on the Shores of Singapore. [online] Available at: <<http://www.wildsingapore.com/wildfacts/plants/coastal/tamarindus/indica.htm>> [Accessed 28 October 2021].
- India Biodiversity Portal. 2021. *Tamarindus indica* L. | Species. [online] Available at: <<https://indiabiodiversity.org/species/show/31829>> [Accessed 28 October 2021].
2021. Sacred Groves and Conservation. Vishakhapatnam.
- En.wikipedia.org. 2021. Sacred groves of India - Wikipedia. [online] Available at: <https://en.wikipedia.org/wiki/Sacred_groves_of_India> [Accessed 28 October 2021].
- The Hindu, 2017. Surviving for centuries, is neglect killing the Nallur Tamarind Grove.
- Deccan Herald, 2009. Tamarind Grove's Secrets. [online] Available at: <Tamarind grove's secrets Read more at: <https://www.deccanherald.com/content/30134/tamarind-groves-secrets.html>> [Accessed 29 October 2021].
- Rizvi, A., 2011. NALLUR THOPU – A 1000-YEAR-OLD DEVARA KADU. [Blog] Bangalore; a Remembered city, Available at: <<http://Aliyeh Rizvi>> [Accessed 29 October 2021].
- The Northeast today, 2017. Learn more about the 5 ‘Sacred Groves’ of Northeast India. [online] Available at: <20. <http://thenortheasttoday.com/5-sacred-groves-of-the-northeast/>> [Accessed 29 October 2021].
- Forest Research Institute, Dehradun, 2015. Significance of Sacred Groves in Conservation of Biodiversity. Coimbatore.
- The Economic Times, 2019. Bengaluru's Nallur tamarind grove gets a sour twist Read more at: https://economictimes.indiatimes.com/news/politics-and-nation/bengalurus-nallur-tamarind-grove-gets-a-sour-twist/articleshow/70188019.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst. [online] Available at: <Bengaluru's Nallur tamarind grove gets a sour twist Read more at: https://economictimes.indiatimes.com/news/politics-and-nation/bengalurus-nallur-tamarind-grove-gets-a-sour-twist/articleshow/70188019.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst> [Accessed 30 October 2021].
- villageinfo.in. (n.d.). Nallur Village in Devanahalli (Bangalore Rural) Karnataka | villageinfo.in. [online] Available at: <https://villageinfo.in/karnataka/bangalore-rural/devanahalli/nallur.html> [Accessed 30 Oct. 2021].
- Chandrashekara U.M. and Sankar S. (1998). Structure and functions of sacred groves: Case studies in Kerala. Pages 323335, In: *Conserving the Sacred for Biodiversity Management* (Ramakrishnan, P.S., Saxena, K.G. and Chandrashekara, U.M., Eds.), UNESCO and Oxford-IBH Publishing, New Delhi.
- Raj, M. (2019). Historical Background of the Grove. [Kannada].
“Cultural and Ecological Dimensions of Sacred Groves in India” by Malhotra, K.C., Gokhale, Y., and Chatterjee, S., 1998
- Devanahalli Fort. (n.d.). [online] Available at: <https://bangalore rural.nic.in/en/tourist-place/devnahalli-fort/> Bangalore Rural, Developed and hosted by National Informatics Centre, Ministry of Electronics & Information Technology, Government of India.
- wgbis.ces.iisc.ernet.in. (n.d.). BIODIVERSITY HOTSPOTS OF KARNATAKA. [online] Available at: http://wgbis.ces.iisc.ernet.in/biodiversity/sahyadri_enews/newsletter/issue11/hotspot/hotspots/Nallur.htm [Accessed 19 Dec. 2021].
- Kandari et al.: Conservation and management of sacred groves, myths and beliefs of tribal communities: a case study from north-India. *Environmental Systems Research* 2014 3:16.