

The Missing Forests of Mumbai



A Vanashakti Report on Unrecognized
Forests of Mumbai



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Forests of Mumbai**

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Citation: Stalin Dayanand, Patil Vicky, Patil Pawan, Mhaske Chitra, Varghese Chris (2022). The missing forests of Mumbai: A Vanashakti report on unrecognized forests of Mumbai. Vanashakti

ABSTRACT

Forests are one of the most biologically active terrestrial ecosystems. They are known to provide varied ecological services and play an important role in maintaining ecological balance. Especially in a metropolitan city like Mumbai, where there are fewer green spaces, these green forested areas help maintain the micro-climate, enrich the groundwater table, and curb pollution levels. Despite these valuable services provided by forests, deforestation has become very rampant in the present era, causing several environmental problems. Urgent steps are required to identify and protect the remaining forested areas to maintain ecological balance and slow the pace of climate change. The present study deals with the identification and assessment of floral diversity at 18 sites across Mumbai City and its suburbs, showing vulnerable and unrecognized forests in Mumbai, Maharashtra. The floristic survey was carried out from June 2021 to October 2022. The present report attempts to highlight the diversity of vast plant resources present within these 18 unrecognized forests from a conservation perspective. A floral diversity of 111 species belonging to 42 families, encompassing 5 herbs, 14 shrubs, 3 climbers, 1 grass, 1 fern, and 87 angiospermic trees were identified. Through our report, we attempt to shed light on these important forests to ensure that they are not treated as isolated disposable/ construction spaces but as spaces that complement our daily lives and well-being. We adopted an area-centric endemic approach with a focus on exploratory research. First-hand observation of the ecology, biodiversity, and interactions was conducted to capture the current scenario of these forests. In addition to the primary observation, research was conducted to learn more about the contextual and historical importance of these places and the communities that depend on them and interact closely with them.

Keywords: Floral diversity, unrecognized forests, Mumbai City, Conservation.

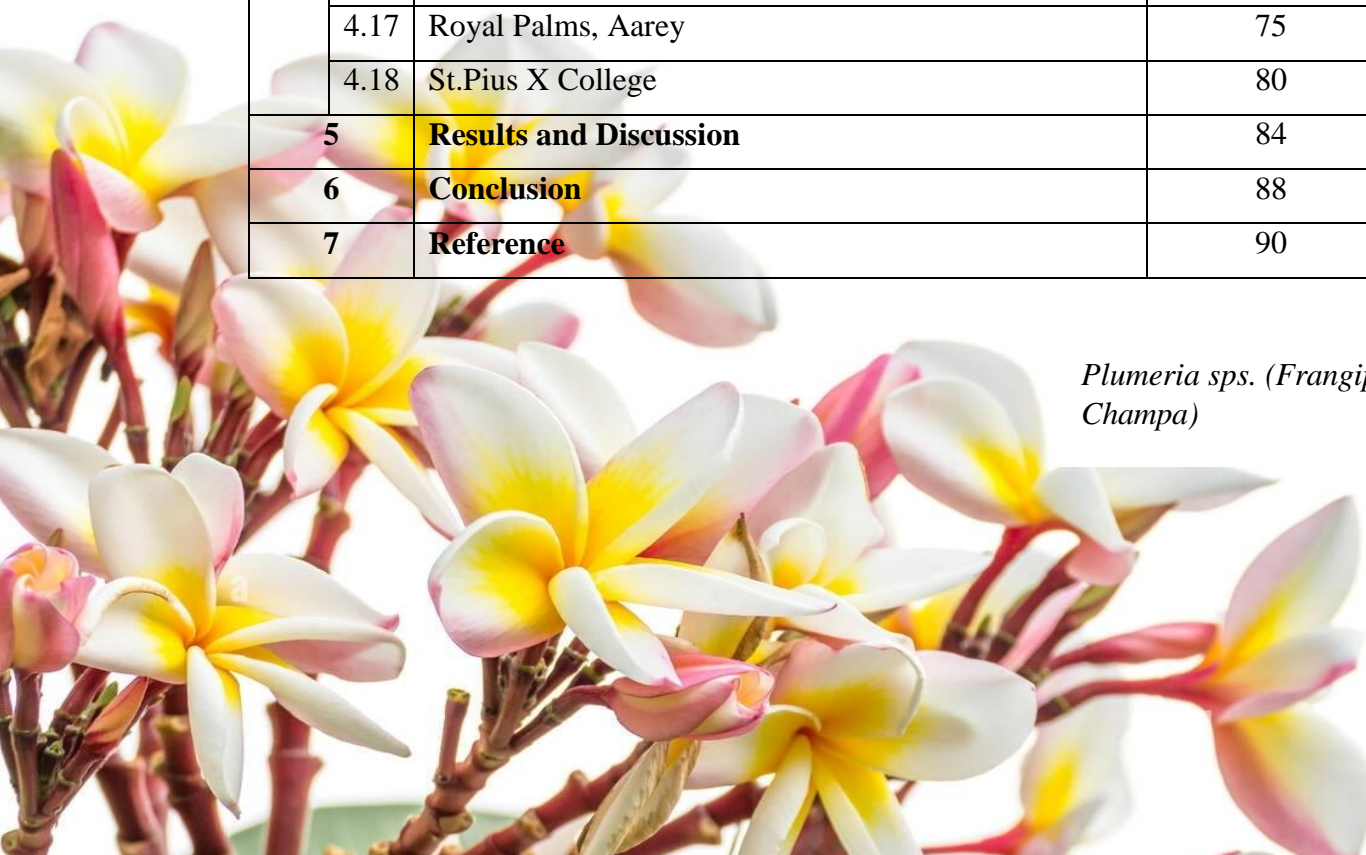


Couroupita guianensis (Cannon Ball Tree)

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Plumeria sps. (Frangipani /
Champa)



FOREWORD

Mumbai once known for its emerald canopies, now grapples with the relentless march of concrete and steel, leading to the erosion of our green havens. However, amidst the ceaseless cacophony of the city, lies a hidden world of enchantment and tranquillity - its precious, yet overlooked, forests.

It is within the folds of these forests that Team Vanashakti, under the able guidance of Project Director Stalin Dayanand, embarked on a challenging journey of discovery, mapping and meticulous documentation. All, ultimately resulting in a genuinely thought-provoking and authentic report, compelled and presented in a book so aptly titled "The Missing Forests of Mumbai."

This book is a culmination of a year-long journey and the importance of this endeavour cannot be overstated. As you leaf through the book, you will find the essence of Mumbai's forests - their beauty, their fragility, and their resilience. Every page reflects the heartbeat of our city's biodiversity and the native flora and fauna recorded within these pages are not just species, they are the colourful vibrant buzz of a thriving ecosystem. They remind us that our forests are not just places of leisure, but vital green lungs that sustain life itself.

As Mumbai's green spaces continue to shrink, the need to protect and preserve these sanctuaries becomes paramount.

The story of Mumbai's Missing Forests is not just a tale; it is an unfolding narrative that we can shape together. In these pages, we find not only a book but a clarion call for action. As responsible citizens, it is our duty to study this book, not merely as passive observers but as active participants in the preservation of our city's natural legacy.

Let us be inspired by the selfless efforts of Team Vanashakti, who have brought these hidden facets to light, and let us emulate their dedication in our small ways.

May this book not only grace your table or your bookshelf but also kindle a fire within your heart, a fire that burns for the protection and restoration of our city's green soul.



(Dr.V.Clement Ben)

**Additional Principal Chief Conservator of Forests
Wildlife Western Region,
Mumbai**

INTRODUCTION:

Since the emergence of life on earth, vegetation has been a crucial component of the ecosystem. Life is directly or indirectly reliant on vegetation for its survival. The extent of land area that is occupied by natural vegetation is referred to as "forest cover." Forests are the abode of many species of birds, animals, insects and more. Forests also function as the abode of many tribes, supporting, enriching several native practices and civilizations. Forests guarantee safe areas for the conservation of such floral and faunal species that are crucial to ecosystem stability. Like forests, hills are additionally very important to the biodiversity that exists in forested hills. Variable altitudes allow a far broader diversity of species. This diversity of flora and fauna is exclusive to these regions and altitudes; therefore, they should be preserved. Hills and forests play mutually supportive roles in protecting the soil and guaranteeing its fertility. The National Forest Policy (1988) of India has recommended 67% forest cover for the hills. Tree cover on hills helps control soil erosion by holding the soil in place through the network of roots. Deeper penetration of tree roots creates a pathway for water to infiltrate, thereby increasing the water table. The interlocking of soil by the extensive root systems of trees, in combination with the soil microbes housed by forests, enriches the soil to maintain its quality. In the absence of vegetation, there is a greater risk of flooding and landslides due to rainwater runoff, threatening the lives of those who inhabit hills as well as those in the lower-lying regions. Because of their intelligence, humans began exploiting vegetation for direct benefits such as food, medicine from herbs, and wood for building shelters and other purposes, and have forgotten that vegetation also indirectly contributes to providing fresh air, preventing soil erosion, and maintaining soil water levels. The ecological role played by forests is so crucial that it far outweighs these economic roles.

Over the past few decades, owing to the large-scale urban migration of people into Mumbai, anthropogenic pressures have steadily built on the city's landscape. Housing needs, commercial exploitation all seem to be nibbling away the green cover of the city. Adding to the severity of the problem is the pressure that's been exerted on nature through the demand for resources and the dumping and discharge of waste and wastewater. This is because of the irreplaceable role played by trees in curbing atmospheric pollutants and sequestering carbon. They also help in

reducing greenhouse gases by acting as a medium for gaseous exchange, providing oxygen, maintaining the microclimate and reducing the temperature levels. The decline in forest cover also impacts the existing biodiversity, which is important for the normal functioning of the environment.

From the rainforests of Kerala in the south to the alpine pastures of Ladakh in the north, from the deserts of Rajasthan in the west to the evergreen forests of the northeast, India has a diverse range of forests. The main factors that determine the type of forest are climate, soil type, topography, and elevation. Forests are classified based on their nature and composition, the climate in which they thrive, and their relationship to the surrounding environment. The Champion and Seth classification system (1968) divided Indian forests into six major groups, i.e., tropical forests; montane sub-tropical forests; dry tropical forests; montane temperate forests; sub-alpine forests; and Alpine forests. (Kirti Amritkar-Wani, 2009).

The National Forest Policy of India, 1988, envisaged a goal of achieving 33 % of the geographical area of the country under forest and tree cover. As per the forest survey report 2021, the forest cover in the country is 7,13,789 sq. km., which is just 21.71% of the geographical area of the country. It was estimated that there was an increase of 1,540 sq. km. of forest cover in the past two years. The country's tree cover (small pockets beyond the forests) is also continuing to increase. The tree cover is projected to be 95,748 sq.km or 2.9% of its geographical area. The country's tree cover has increased by 721 sq. km since the last assessment in 2019. Environmentalist and researchers throughout the nation considered these value from 'Forest Survey Report 2021' as misleading and raised concerns that farmlands, grasslands and plantations have been considered as forested areas while assessment of forested cover.

The state of Maharashtra has about 50,798 sq. km. of forest cover in comparison to its total geographical area of 3,07,713 sq. km. which accounts for about 16.51%. Seven major cities in India like Ahmedabad, Bengaluru, Chennai, Delhi, Hyderabad, Kolkata, and Mumbai have a total forest cover of 509.72 sq. km. which is 10.21 % of the total geographical cover of these cities. It was observed that the capital city – Delhi, has the largest forest cover of about 194.24 sq. km. followed by the financial capital, Mumbai with a forest cover of 110.77 sq. km. A study published in Springer's Journal - Nature in July 2020 found a 42.5% decline in Mumbai's green space over 30 years (India State of Forest Report, 2021). Maharashtra is the fourth state in the country to have diverted most forest land to non-forest uses, including open-cast mining. Along with unsustainable development, Mumbai's forests have also seen an increase in wildfires from 702 in 2014 to 3,487 in 2017.



Chipko Movement in Uttarakhand (pc@ Indian Express)

Environmental movements like Chipko Movement, Silent Valley Movement, Save Aarey Movement and Appiko Movement created awareness regarding the protection and conservation of forests in India. The common people along with judicial activism have mostly stood for the protection of forested areas in the country. For example, in the landmark case of **T. N. Godavarman Vs Union of India** (12/12/1996), the Hon`ble Supreme Court had to engage in a **Writ of Continuous Mandamus**, which meant that removing or destroying forests would no longer be easy. The judgment reads:

*The word "forest: must be understood according to its dictionary meaning. This description cover all statutorily recognized forests, whether designated as reserved, protected or otherwise for the purpose of Section 2(i) of the Forest Conservation Act. The term "forest land", occurring in Section 2, will not only include "forest" as understood in the **dictionary** sense, but also any area recorded as forest in the Government record irrespective of the ownership.*

*Each State Government should constitute within one month an Expert Committee to: (i) Identify areas which are "forests", irrespective of whether they are so notified, recognized or classified under any law, and **irrespective** of the ownership of the land of such forest; (ii) identify areas which were earlier forests but stand degraded, denuded or cleared; and (iii) identify areas covered by plantation trees belonging to the Government and those belonging to private persons.*

Despite the knowledge of the extent of forest cover available to the government, little or no effort has been made to identify and protect these patches of forest since 1996. We are at a crossroads in time and history that no longer delay can be accepted. The vulnerabilities and challenges presented by massive population growth, climate variability, and massive human-induced alterations of the terrestrial landscape (Alkama and Cescatti, 2016; Steffen et al., 2015b), particularly in the context of forests, water, and their interaction, necessitate a much faster response to and resolution of this debate than has previously been possible. In the past few decades, there has been increased concern towards the management and fate of our remaining forest lands (Lund, Gyde. (2018). An accurate assessment of forests across the city is essential to ensuring they are protected from further destruction. In an affidavit filed before the Hon'ble High Court of Bombay by Forest Survey of India it is was submitted that “the forest cover of the Mumbai Sub-urban district as per the latest Forest Cover Assessment of Forest Survey of India as published in the India State of Forest Report (ISFR) 2017 is 140 sq. kms. (Moderately Dense Forest - 67 sq. kms. and Open Forest - 73 sq. kms.)”. Sanjay Gandhi National Park in Mumbai is spread across an area of 102 sq. km. whereas the adjoining Aarey Colony covers approximately around 12.4 sq.kms. which makes a total of 114.4 sq kms. of forest cover. If we were to consider the 140 sq.km. mentioned by Forest Survey of India in Forest Cover Assessment report there is still a gap of approximately 25.6 sq. km. of forest cover in Mumbai. Therefore, Vanashakti initiated this study to locate and inventories the existing hills and forests in Mumbai which are not reflected in the government records.



Lagerstroemia speciosa (Pride of India/Jarul/Tamhan)

2. METHODOLOGY:

The purpose of the study was to obtain preliminary estimates of the forest areas of Mumbai that had been overlooked (unsurveyed). This preliminary study serves as a guide for a more complete analysis of these forests. Due to the preliminary nature of the study, the focus was to

- (a) Locate areas of Mumbai that can be quantified as forests.
- (b) Compile a preliminary databases of the flora found in these forests

The selection of the study area was carried out with the help of a geographic information system. Locations with an area of more than 1 hectare indicating green spaces on satellite images of Mumbai were identified and mapped. A review of the available literature on plant diversity related to these identified areas was carried out to gain insight into their prevailing conditions. The floristic research to verify the ground realities was carried out from June 2021 to October 2022.

Field surveys were carried out to assess the plant diversity prevailing in the selected locations. A checklist of the floral diversity was prepared during the field surveys along with the field notes. Specimens and photographs of unidentified plant species were collected during the field visits for review. The collected specimens were identified using existing literature (Bentham & Hooker, 1862-83; Cooke, 1901-08) and preserved in the form of photographs.

Mangifera indica (Mango)



3. STUDY AREA:

Mumbai is both the capital of the Indian state of Maharashtra and the financial capital of India. According to the United Nations, Mumbai is the world's eighth most populous city, with a population of approximately 2 crores (20 million) as of 2018. Mumbai is located in the Konkan region on the west coast of India, where it has a deep natural harbor. The seven islands that make up Mumbai are located on a narrow peninsula in the southwest of Salsette Island, which lies between the Arabian Sea to the west, Thane Creek to the east, and Vasai Creek to the north. The suburban area of Mumbai occupies most of the island. Mumbai consists of two distinct regions: the Mumbai City District and the Mumbai Suburban District. The total area of Mumbai is 603.4 km² (233 sq. mi). Of this, the island city covers 67.79 km² (26 sq. mi), while the suburban area covers 370 km² (143 sq. mi). Many parts of the city are just above sea level, with elevations of 10 m. (33 ft.).

Topographical features like hills and mountains to creeks, estuaries and rivers to plains and marshes can be observed in Mumbai. These varied landforms provide an excellent platform for the diverse life forms to survive. Therefore, one can find terrestrial trees like Peepal, Banyan, and Mango to mangroves in the coastal region. The metropolitan city of Mumbai is blessed to have two protected areas within its urban limits, i.e., the Sanjay Gandhi National Park and the Thane Creek Flamingo Bird Sanctuary. Due to the vast tree cover that these regions harbour, it is often referred to as the "Lungs of Mumbai". In addition to these major forests, there are numerous areas within Mumbai with considerable green cover that can be declared as forests and protection can be ensured for them. Such places with the potential to be recognized and conserved as forest were identified by us, and a total of 17 sites located within Mumbai were selected for the study.



Butea monosperma (Flame of Forest / Palash)

STUDY LOCATIONS:



Sr. No.	Name of the forest
1	Dr. Babasaheb Ambedkar Garden, Powai
2	IIT, Mumbai
3	Sion Fort
4	Dharavali Adivasi Pada
5	Ismail Yusuf College
6	Suryanagar Hill, Vikroli
7	Dindoshi Dongari
8	Madh Island
9	Holy Trinity Church, Powai
10	Gorai Essel Parking Hill
11	Mahakali Caves
12	Trombay Hill, BARC
13	Hiranandani Helipad Hill
14	Peru Bagh Valhar
15	Veravali Water Reservoir
16	Shipping Corporation of India Campus, Powai
17	Royal Palms, Aarey
18	St.Pius X College

Figure 2: Satellite Image of Mumbai with study location

Table no. 1: Details of study locations

Sr. No.	Name of the forest	Location		Area (Hectare)
		Latitude	Longitude	
1	Dr. Babasaheb Ambedkar Garden, Powai	19° 7' 45.14" N	72° 53' 49.99" E	21.5
2	IIT, Mumbai	19° 7' 56.33" N	72° 54' 48.06" E	156
3	Sion Fort	19° 2' 47.72" N	72° 52' 03.65" E	3.87
4	Dharavali Adivasi Pada	19° 9'34.74" N	72° 48' 20.85" E	58
5	Ismail Yusuf College	19° 8' 1.19" N	72° 51' 10.88" E	20.8
6	Suryanagar Hill, Vikroli	19° 6' 52.36" N	72° 55' 16.33" E	49.6
7	Dindoshi Dongari	19° 10' 16.13" N	72° 52' 22.08" E	138
8	Madh Island	19° 8' 5.80" N	72° 47' 40.48" E	9.81
9	Holy Trinity Church, Powai	19° 7' 53.05" N	72° 55' 17.41" E	48.9
10	Gorai Essel Parking Hill	19° 14' 30.56" N	72° 48' 13.07" E	37.4
11	Mahakali Caves	19° 07' 42.09" N	72° 52' 24.75" E	13.7
12	Trombay Hill, BARC	19° 1' 21.49" N	19° 01' 21.49" N	664
13	Hiranandani Helipad Hill	19° 6' 32.68" N	72° 54' 35.48" E	57.7
14	Peru Baug Valhar	19° 8' 18.79" N	72° 54' 23.12" E	32.1
15	Veravali Water Reservoir	19° 8' 0.76" N	72° 52' 20.90" E	15
16	Shipping Corporation of India Campus, Powai	19° 7'2.93"N	72° 53' 49.43" E	17.62
17	Royal Palms, Aarey	19° 9'9.08"N	72° 53' 31. 69"E	24.17
18	St.Pius X College	19°10'5.36"N	72°51'26.21"E	10.6
Total Area (Hectare)				1,378.23

4 OBSERVATIONS AND FINDINGS:

4.1 DR. BABASHAHEB AMBEDKAR GARDEN POWAI



Figure 3: Satellite image of Dr.Babashaheb Ambedkar Garden, Powai

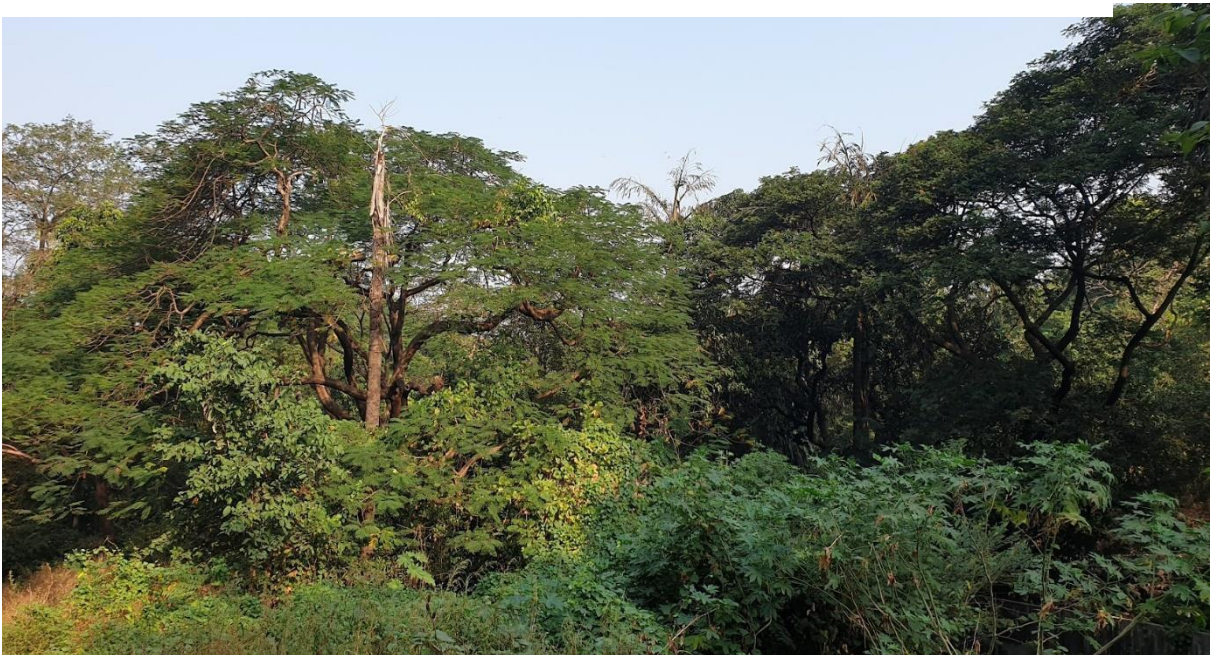


Figure 4: Tree cover at Dr.Babashaheb Ambedkar Garden, Powai

Dr. Babasaheb Ambedkar Garden is a park located at Hiranandani-Vikhroli Link Road near Powai Lake, also known as "Powai Garden" or "Deer Park". The Dr. Ambedkar Garden is surrounded by a thick forest that spreads over 26 hectares. The green cover of this land is about 21.5 hectares. Dr. Ambedkar Garden is the only park in the city and has a large lake adjacent to it. During monsoons, citizens enjoy the refreshing sight of a waterfall that overflows the Powai Lake. While studying the floral diversity of Dr. Babasaheb Ambedkar Garden, we encountered 43 different species of plants.

Table no 2: Plant diversity at Dr. Babasaheb Ambedkar Garden Powai

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Jungle Cork Tree	<i>Holoptelea integrifolia</i>	Tree	Ulmaceae
2	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
3	Indian Ash Tree	<i>Lannea coromandelica</i>	Tree	Anacardiaceae
4	Indrajao	<i>Holarrhena pubescens</i>	Shrub	Apocynaceae
5	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
6	Indian Tragacanth	<i>Sterculia urens</i>	Tree	Malvaceae
7	Indian Jujube	<i>Ziziphus mauritiana</i>	Shrub	Rhamnaceae
8	Indian Mulberry	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
9	Dhaman	<i>Grewia tiliifolia</i>	Tree	Malvaceae
10	Spinous Kino Tree	<i>Bridelia retusa</i>	Tree	Phyllanthaceae
11	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
12	Kumkum	<i>Mallotus phillippensis</i>	Tree	Euphorbiaceae
13	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae
14	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
15	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
16	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
17	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae
18	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae

19	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
20	Tasmanian Blue Gum	<i>Eucalyptus globulus</i>	Tree	Myrtaceae
21	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
22	Soccer Ball Tree	<i>Morinda pubescens</i>	Shrub	Rubiaceae
23	Fish Tail Palm	<i>Caryota urens</i>	Tree	Arecaceae
24	Haladu	<i>Haldina cordifolia</i>	Tree	Rubiaceae
25	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
26	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
27	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae
28	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	Tree	Fabaceae
29	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
30	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
31	Toddy palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
32	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
33	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae
34	Indian Charcoal tree	<i>Trema orientalis</i>	Tree	Cannabaceae
35	Sandpaper Tree	<i>Streblus asper</i>	Tree	Moraceae
36	Bamboo	<i>Bambusoideae sps.</i>	Grass	Poaceae or Gramineae
37	Cocunut	<i>Cocos nucifera</i>	Tree	Arecaceae
38	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
39	Wild Almond	<i>Sterculia foetida</i>	Tree	Malvaceae
40	Indian Almond	<i>Terminalia catappa</i>	Tree	Combretaceae
41	Red Bead Tree	<i>Adenanthera pavonina</i>	Tree	Fabaceae
42	Camel's Foot Tree	<i>Bauhinia purpurea</i>	Tree	Fabaceae
43	Casuarina	<i>Casuarina equisetifolia</i>	Tree	Casuarinaceae

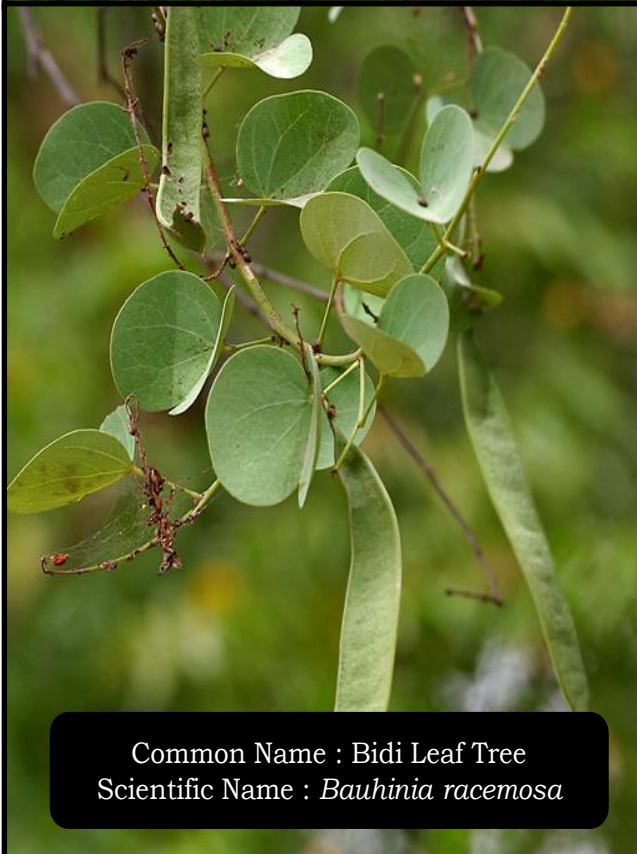
Dr. Babasaheb Ambedkar Garden, Powai



Common Name : Mango
Scientific Name : *Mangifera indica*



Common Name : Red Bead Tree
Scientific Name : *Adenanthera pavonina*



Common Name : Bidi Leaf Tree
Scientific Name : *Bauhinia racemosa*



Common Name : Bamboo
Scientific Name : *Bambusoideae Sps.*

4.2 IIT, MUMBAI



Figure 5: Satellite Image of IIT, Mumbai

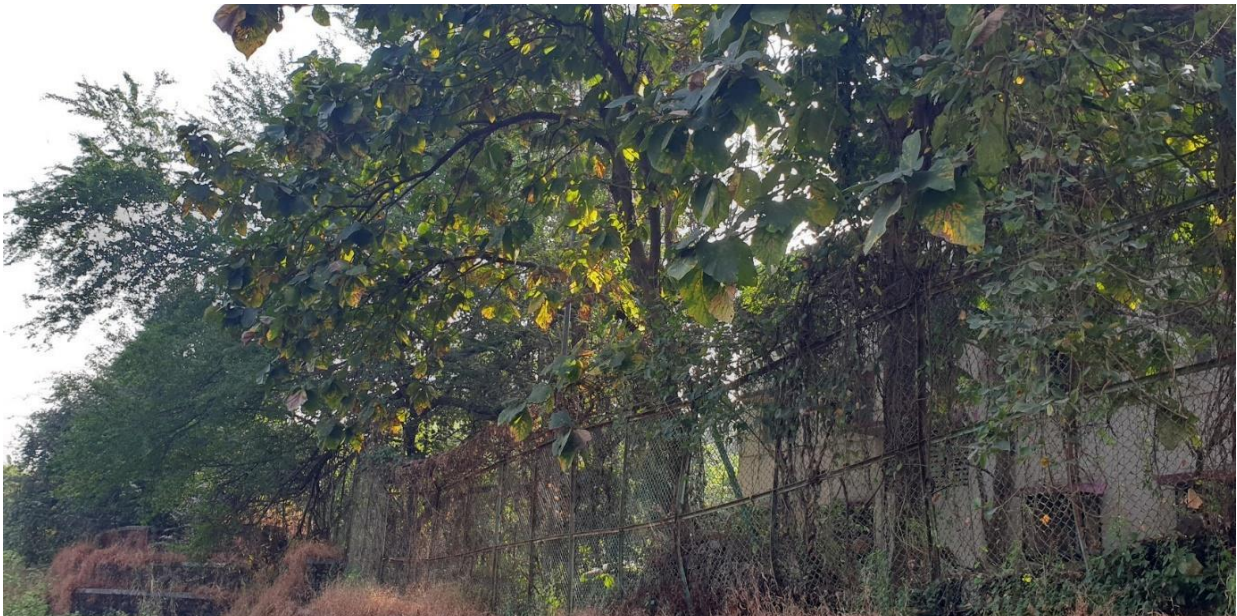


Figure 6: Tree cover at IIT, Mumbai

The Indian Institute of Technology (IIT) is an internationally acclaimed autonomous public research university and technical institute in Powai, Mumbai. IIT-Mumbai is considered one of the green educational institutes in Mumbai with a rich floral and faunal diversity. The IIT Campus encircles Powai Lake and part of Vihar Lake, which are significant wetlands in India. While Vihar Lake is located within the boundaries of the SGNP. The IIT Bombay campus has an area of about 220 hectares, out of which 156 hectares have green cover. This is the most important area for sustaining biodiversity since it is connected to the Sanjay Gandhi National Park to the north. In 2008, the World Wildlife Fund carried out a study of biodiversity at IIT Bombay under the stewardship of noted ecologist Dr. Goldin Quadros. The study carried out is testimony to the fact that this institute is considered a biodiversity hotspot, which is unique for a college campus. While studying the floral diversity of the IIT-Bombay campus, we found 50 different species of plants, including *Curcuma Aromatica*, which is threatened as per the IUCN Red List category.

Table no. 3: Plant diversity at IIT, Mumbai

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Jungle Cork Tree	<i>Holoptelea integrifolia</i>	Tree	Ulmaceae
2	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
3	Indian Ash Tree	<i>Lannea coromandelica</i>	Tree	Anacardiaceae
4	Indrajao	<i>Holarrhena pubescens</i>	Shrub	Apocynaceae
5	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
6	Cannon Ball Tree	<i>Couroupita guianensis</i>	Tree	Lecythidaceae
7	Indian Jujube	<i>Ziziphus mauritiana</i>	Shrub	Rhamnaceae
8	Indian Mulberry	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
9	Dhaman	<i>Grewia tiliifolia</i>	Tree	Malvaceae
10	Spinous Kino Tree	<i>Bridelia retusa</i>	Tree	Phyllanthaceae
11	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
12	Kumkum	<i>Mallotus phillippensis</i>	Tree	Euphorbiaceae
13	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae

14	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
15	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
16	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
17	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae
18	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
19	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
20	Tasmanian Blue Gum	<i>Eucalyptus globulus</i>	Tree	Myrtaceae
21	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
22	Soccer Ball Tree	<i>Morinda pubescens</i>	Shrub	Rubiaceae
23	Babool	<i>Vachellia nilotica</i>	Tree	Fabaceae
24	Haladu	<i>Haldina cordifolia</i>	Tree	Rubiaceae
25	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
26	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
27	Cluster Fig	<i>Ficus racemose</i>	Tree	Moraceae
28	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	Tree	Fabaceae
29	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
30	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
31	Toddy palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
32	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
33	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae
34	Royal Palm	<i>Roystonea regia</i>	Tree	Arecaceae
35	Sandpaper Tree	<i>Streblus asper</i>	Tree	Moraceae
36	Bamboo	<i>Bambusoideae sps.</i>	Grass	Poaceae or Gramineae
37	Betel Nut Palm	<i>Areca catechu</i>	Tree	Arecaceae

38	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
39	Wild Almond	<i>Sterculia foetida</i>	Tree	Malvaceae
40	Indian Almond	<i>Terminalia catappa</i>	Tree	Combretaceae
41	Red Bead Tree	<i>Adenantha pavonina</i>	Tree	Fabaceae
42	Camel's Foot Tree	<i>Bauhinia purpurea</i>	Tree	Fabaceae
43	Star Fruit	<i>Averrhoa carambola</i>	Tree	Oxalidaceae
44	Indian Goosberry	<i>Phyllanthus acidus</i>	Tree	Phyllanthaceae
45	Banana	<i>Musa sapientum</i>	Herb	Musaceae
46	Wild Haldi	<i>Curcuma aromatica</i>	Herb	Zingiberaceae
47	North Indian Rosewood	<i>Dalbergia sissoo</i>	Tree	Fabaceae
48	Common Fig	<i>Ficus carica</i>	Tree	Moraceae
49	Flame of Forest	<i>Butea monosperma</i>	Tree	Fabaceae
50	Golden Shower Tree	<i>Cassia fistula</i>	Tree	Fabaceae

Dalbergia sissoo (North Indian Rosewood)



IIT, Mumbai



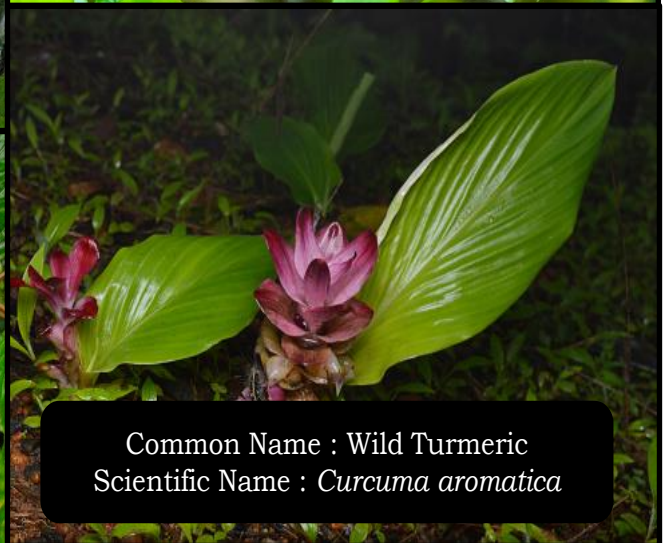
Common Name : Pride of India
Scientific Name : *Lagerstroemia speciosa*



Common Name : Kumkum Tree
Scientific Name : *Mallotus philippensis*



Common Name : Bandicoot Berry
Scientific Name : *Leea indica*



Common Name : Wild Turmeric
Scientific Name : *Curcuma aromatica*



Common Name : Flame of the forest
Scientific Name : *Butea monosperma*

4.3 SION FORT

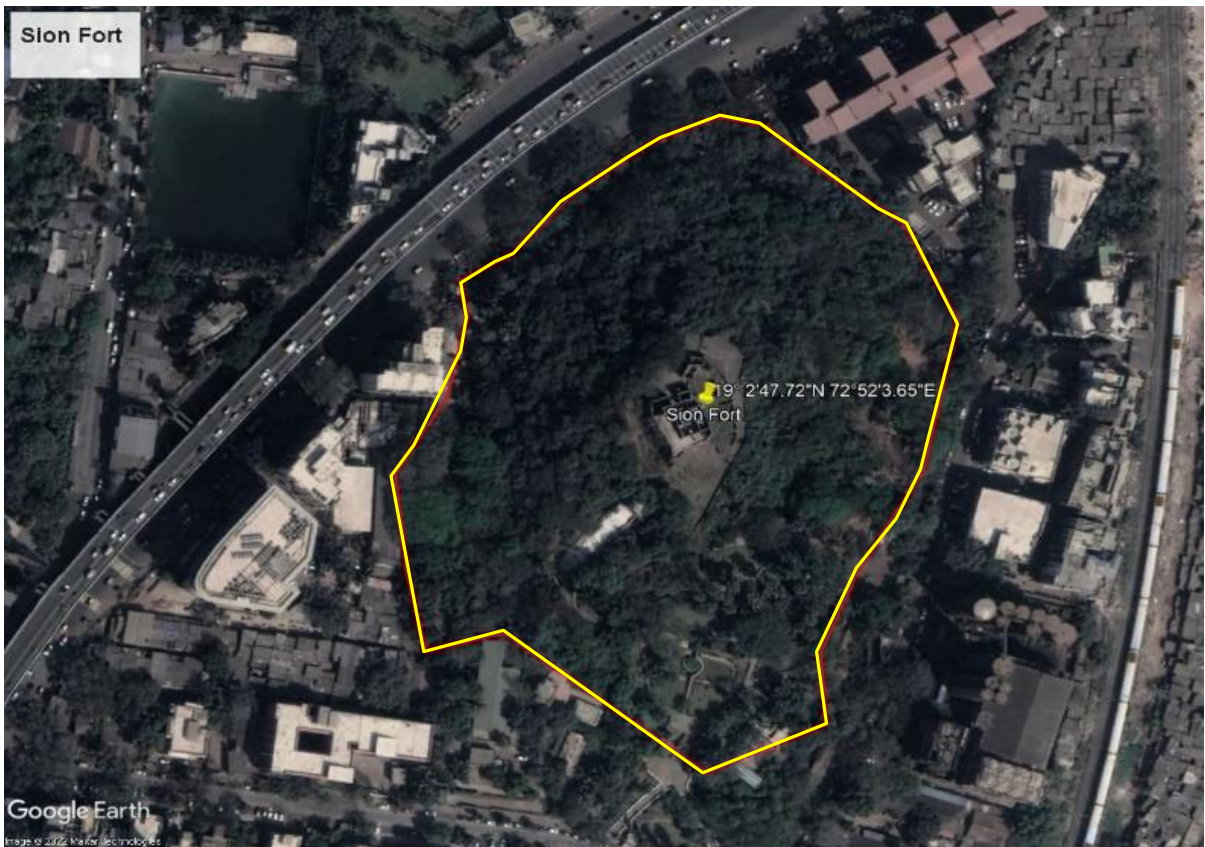


Figure 7: Satellite Image of Sion Fort



Figure 8: Tree cover at Sion Fort

The Sion Fort is located close to the Sion railway station and is probably the tallest fort in the Mumbai region. It was built under the regime of the English East India Company, between 1669 and 1677, atop a conical hillock. It was notified in 1925 as a Grade I heritage structure. At the base of the fort lies a garden called the Pandit Jawaharlal Nehru Udyan. The total green cover is about 3.87 hectares. While studying the floral diversity of Pandit Jawaharlal Nehru Garden, Sion Fort, we found 38 different species of plants including *Amorphophallus commuatus*, which falls in the threatened category of IUCN Red List species.

Table no. 4: Plant diversity at Sion Fort

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	African Tulip	<i>Spathodea campanulata</i>	Tree	Bignoniaceae
2	Soccer Ball Tree	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
3	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
4	Camel's Foot Tree	<i>Bauhinia purpurea</i>	Tree	Fabaceae
5	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
6	Jackfruit	<i>Artocarpus heterophyllus</i>	Tree	Moraceae
7	Toddy Palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
8	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
9	Coconut	<i>Cocos nucifera</i>	Tree	Arecaceae
10	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
11	Copper pod tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
12	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
13	Wild Almond	<i>Sterculia foetida</i>	Tree	Malvaceae
14	Indian Almond	<i>Terminalia catappa</i>	Tree	Combretaceae
15	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
16	Indian Mulberry	<i>Morinda pubescens</i>	Shrub	Rubiaceae

17	Banyan	<i>Ficus benghalensis</i>	Tree	Moraceae
18	Peepal	<i>Ficus religiosa</i>	Tree	Moraceae
19	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
20	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
21	Opposite leaf Fig	<i>Ficus hispida</i>	Tree	Moraceae
22	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
23	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
24	Women's Tongue	<i>Albizia lebeck</i>	Tree	Fabaceae
25	False Ashoka	<i>Polyalthia longifolia</i>	Tree	Annonaceae
26	Kanak Champa	<i>Pterospermum acerifolium</i>	Tree	Malvaceae
27	Scarlet Cordia	<i>Cordia sebestena</i>	Tree	Boraginaceae
28	Hairy Fig	<i>Ficus asperrima</i>	Tree	Moraceae
29	Ceylon Iron Wood	<i>Manilkara hexandra</i>	Tree	Sapotaceae
30	Spinous Kino Tree	<i>Bridelia retusa</i>	Tree	Phyllanthaceae
31	Sita Ashoka	<i>Saraca indica</i>	Tree	Fabaceae
32	Flame of Forest	<i>Butea monosperma</i>	Tree	Fabaceae
33	Garden Balsam	<i>Impatiens balsamina</i>	Herb	Balsaminaceae
34	Wild Grape	<i>Apelocissus latifolia</i>	shrub	Vitaceae
35	Singapore Cherry	<i>Muntingia calabura</i>	Shrub	Muntingiaceae
36	Dragon Stalk Yam	<i>Amorphophallus commutatus</i>	Herb	Araceae
37	Maidenhair Fern	<i>Adiantum capillus-veneris</i>	Fern	Pteridaceae
38	Golden Shower Tree	<i>Cassia fistula</i>	Tree	Fabaceae

Sion Fort



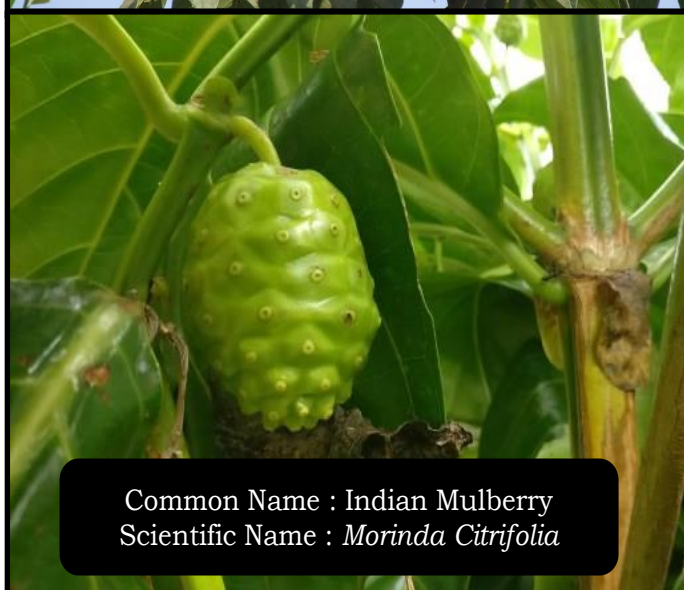
Common Name : Garden Balsam
Scientific Name : *Impatiens balsamina*



Common Name : Dragon Stalk Yam
Scientific Name : *Amorphophallus commutatus*



Common Name : African Tulip Tree
Scientific Name : *Spathodea campanulata*



Common Name : Indian Mulberry
Scientific Name : *Morinda Citrifolia*



Common Name : Golden Shower Tree
Scientific Name : *Cassia Fistula*

4.4 DHARAVALI ADIVASI PADA



Figure 9: Satellite image of Dharavali Adivasi Pada



Figure 10: Tree cover at Dharavali Adivasi Pada

Dharavali Adivasi Pada (Tribal hamlet) lies to the west of the Salsette, on the west of the Arbaian Sea and to the east of Malad Creek. It is a dense hill area called Dharavli village, which has a green area of about 58 hectares. Presently, the area is under encroachment from all sides. There are many illegal chawls and colonies that have come up in the last two decades. A total of 45 plant species were observed during the study.

Table no. 5: Plant diversity at Dharavali Pada

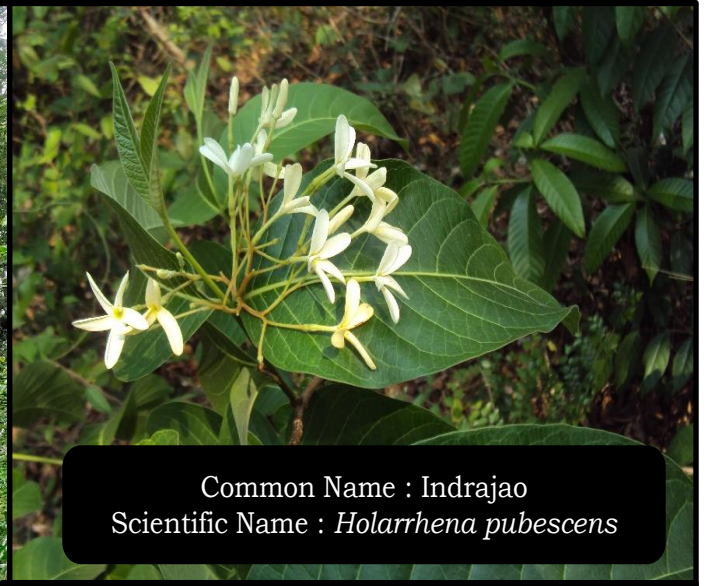
Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Jungle Cork Tree	<i>Holoptelea integrifolia</i>	Tree	Ulmaceae
2	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
3	Indian Ash Tree	<i>Lannea coromandelica</i>	Tree	Anacardiaceae
4	Indrajao	<i>Holarrhena pubescens</i>	Shrub	Apocynaceae
5	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
6	Cannon Ball Tree	<i>Couropita guianensis</i>	Tree	Lecythidaceae
7	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
8	Indian Mulberry	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
9	Dhaman	<i>Grewia tiliifolia</i>	Tree	Malvaceae
10	Spinous Kino Tree	<i>Bridelia spinose</i>	Tree	Phyllanthaceae
11	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
12	Kumkum	<i>Mallotus phillippensis</i>	Tree	Euphorbiaceae
13	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae
14	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
15	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
16	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
17	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae
18	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
19	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
20	Tasmanian Blue Gum	<i>Eucalyptus globulus</i>	Tree	Myrtaceae

21	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
22	Soccer Ball Tree	<i>Morinda pubescens</i>	Shrub	Rubiaceae
23	Fish Tail Palm	<i>Caryota urens</i>	Tree	Arecaceae
24	Haladu	<i>Haldina cordifolia</i>	Tree	Rubiaceae
25	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
26	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
27	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae
28	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	Tree	Fabaceae
29	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
30	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
31	Toddy palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
32	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
33	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae
34	Royal Palm	<i>Roystonea regia</i>	Tree	Arecaceae
35	Sandpaper Tree	<i>Streblus asper</i>	Tree	Moraceae
36	Bamboo	<i>Bambusoideae sps.</i>	Grass	Poaceae or Gramineae
37	Betel Nut Palm	<i>Areca catechu</i>	Tree	Arecaceae
38	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
39	Wild Almond	<i>Sterculia foetida</i>	Tree	Malvaceae
40	Indian Almond	<i>Terminalia catappa</i>	Tree	Combretaceae
41	Red Bead Tree	<i>Adenanthera pavonina</i>	Tree	Fabaceae
42	Camel's Foot Tree	<i>Bauhinia purpurea</i>	Tree	Fabaceae
43	Star Fruit	<i>Averrhoa carambola</i>	Tree	Oxalidaceae
44	Indian Goosberry	<i>Phyllanthus acidus</i>	Tree	Phyllanthaceae
45	Golden Shower Tree	<i>Cassia fistula</i>	Tree	Fabaceae

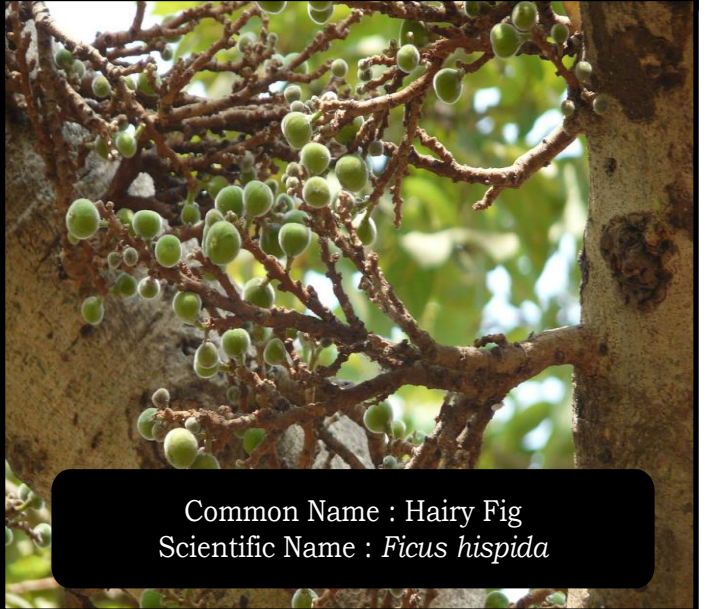
Dharivali Adivasi Pada



Common Name : Cannonball Tree
Scientific Name : *Couroupita guianensis*



Common Name : Indrajaio
Scientific Name : *Holarrhena pubescens*



Common Name : Hairy Fig
Scientific Name : *Ficus hispida*



Common Name : Spinous Kino Tree
Scientific Name : *Bridelia spinosa*



Common Name : Dhaman
Scientific Name : *Grewia tiliifolia*

4.5 ISMAIL YUSUF COLLEGE



Figure 11::Satellite Image of Ismail Yusuf College



Figure 12: Tree cover at Ismail Yusuf College

Ismail Yusuf College was established in 1930 at Jogeshwari, Mumbai. It has an area of 20.8 hectares covered with varied plant species. While studying the floral diversity of Ismail Yusuf College, we observed 35 different species of plants, including *Amorphophallus commuatus*, which falls in the threatened category of IUCN Red List species. The lush green campus also plays a vital role in curbing the pollution caused by the Western Express. There is a need for the protection of such valuable green cover from anthropogenic activities and habitat fragmentation.

Table no. 6: Plant diversity at Ismail Yusuf College

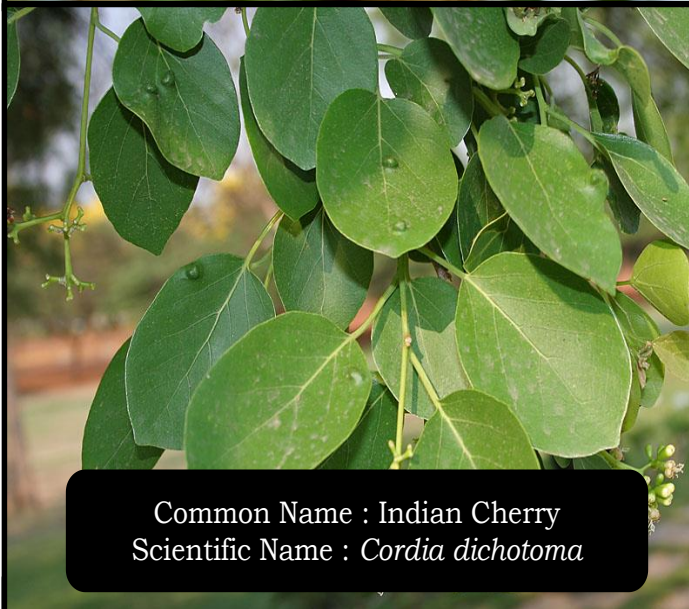
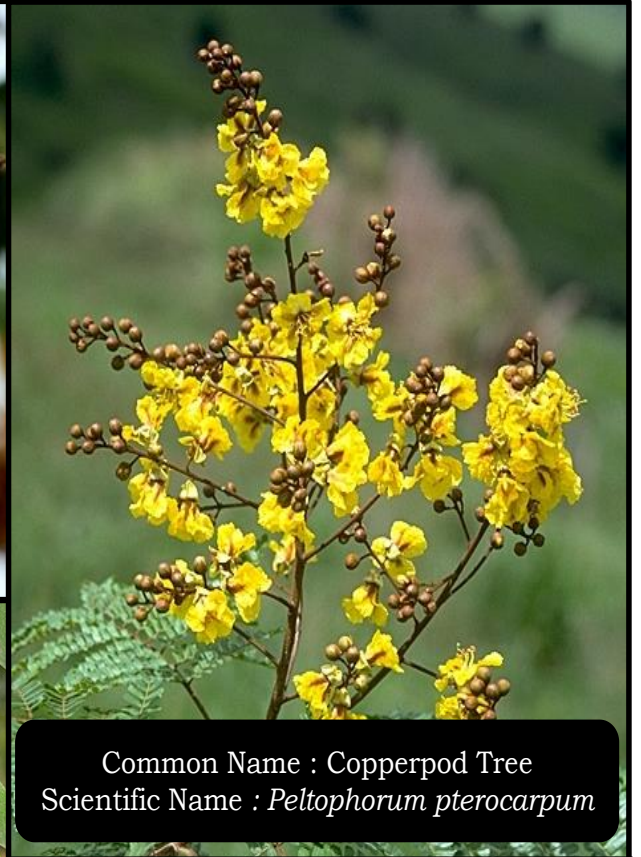
Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Drangon Stalk Yam	<i>Amorphophallus commuatus</i>	Herb	Araceae
2	Soccer Ball Tree	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
3	Vaval	<i>Holoptelea Integrifolia</i>	Tree	Ulmaceae
4	Indian Cherry	<i>Cordia dichotoma</i>	Tree	Boraginaceae
5	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
6	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
7	Dhaman	<i>Grewia tiliifolia</i>	Tree	Malvaceae
8	Silk Cotton Tree	<i>Bombax ceiba</i>	Tree	Bombacaceae
9	Indian Charcoal Tree	<i>Trema orientalis</i>	Tree	Cannabaceae
10	Red Bead Tree	<i>Adenanthera pavonina</i>	Tree	Fabaceae
11	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae
12	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae
13	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
14	Black Wattle	<i>Acacia mangleium</i>	Tree	Fabaceae
15	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
16	Bandicoot Berry	<i>Leea indica</i>	Shrub	Vitaceae
17	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
18	Coral Bead Vine	<i>Abrus precatorius</i>	Tree	Fabaceae

19	Sandpaper Tree	<i>Streblus asper</i>	Tree	Moraceae
20	Cluster Fig	<i>Ficus glomerata</i>	Tree	Moraceae
21	Pandhra Kuda	<i>Holarrhena pubescens</i>	Shrub	Apocynaceae
22	Dyer's Oleander	<i>Wrightia tinctoria</i>	Tree	Apocynaceae
23	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
24	Cannonball tree	<i>Couropita guianensis</i>	Tree	Lecythidaceae
25	Spanish Cherry	<i>Mimusops elengi</i>	Tree	Sapotaceae
26	Kaim	<i>Mitragyna parvifolia</i>	Tree	Rubiaceae
27	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
28	Fish Poison Tree	<i>Barintoina asiatica</i>	Tree	Lecythidaceae
29	Wild Almond	<i>Streerculia Foetida</i>	Tree	Malvaceae
30	Indian Badam	<i>Terminalia catappa</i>	Tree	Combretaceae
31	Ceylon Caper	<i>Capparis zeylanica</i>	Shrub	Capparaceae
32	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
33	Lucky Bean Tree	<i>Putranjiva roxburghii</i>	Tree	Putranjivaceae
34	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
35	Giant Milkweed	<i>Calotropis gigantea</i>	Shrub	Apocynaceae



Calotropis gigantea (Giant Milkweed)

Ismail Yusuf College



4.6 SURYANAGAR HILL VIKROLI

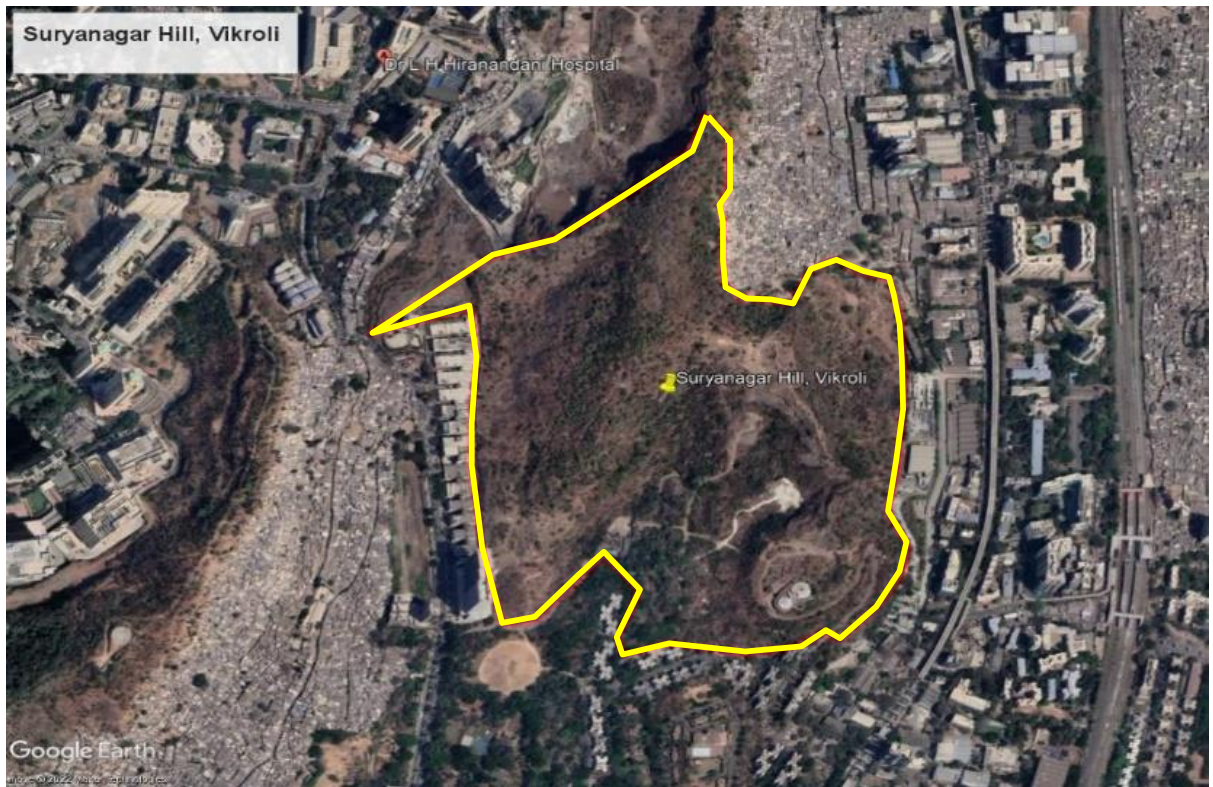


Figure 13: Satellite Image of Suryanagar Hill, Vikroli



Figure 14: Tree cover at Suryanagar Hill, Vikroli

The Suryanagar Hill lies to the southeast of Powai Lake, Vikroli, and Mumbai. Suryanagar surrounds the hill in the east, Varshanagar in the southwest, and Godrej hill and colony in the south; the Suryanagar hills are continuous ranges of SGNP hills. The forest cover of Suryanagar hill is about 49.6 hectares. Surya Nagar is identified among unsafe areas during the monsoon, as there are cases of landslides observed very often. While studying the floral diversity of Suryanagar Hill, we found 36 different species of plants. The forest is under severe threat due to encroachment and excavation.

Table no. 7: Plant diversity at Suryanagar Hill, Vikhroli

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Jungle Cork Tree	<i>Holoptelea integrifolia</i>	Tree	Ulmaceae
2	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
3	Indian Ash Tree	<i>Lannea coromandelica</i>	Tree	Anacardiaceae
4	Indrajao	<i>Holarrhena pubescens</i>	Shrub	Apocynaceae
5	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
6	Indian Tragacanth	<i>Sterculia urens</i>	Tree	Malvaceae
7	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
8	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
9	Dhaman	<i>Grewia tiliifolia</i>	Tree	Malvaceae
10	Spinous Kino Tree	<i>Bridelia retusa</i>	Tree	Phyllanthaceae
11	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
12	Kumkum	<i>Mallotus phillippensis</i>	Tree	Euphorbiaceae
13	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae
14	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
15	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
16	Sandpaper Tree	<i>Streblus asper</i>	Tree	Moraceae
17	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae
18	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
19	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae

20	Tasmanian Blue Gum	<i>Eucalyptus globulus</i>	Tree	Myrtaceae
21	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
22	Soccer Ball Tree	<i>Morinda pubescens</i>	Shrub	Rubiaceae
23	Indian Mulberry	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
24	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
25	Haladu	<i>Haldina cordifolia</i>	Tree	Rubiaceae
26	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
27	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
28	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae
29	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	Tree	Fabaceae
30	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
31	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
32	Toddy palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
33	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
34	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae
35	Indian Charcoal tree	<i>Trema orientalis</i>	Tree	Cannabaceae
36	Bamboo	<i>Bambusoideae</i> sps.	Grass	Poaceae or Gramineae



Delonix regia (Flame Tree/Gulmohar)

Suryanagar Hill, Vikhroli



Common Name : Indian Ash Tree
Scientific Name : *Lannea coromandelica*



Common Name : White Silk Cotton Tree
Scientific Name : *Ceiba pentandra*



Common Name : Pongam Tree
Scientific Name : *Pongamia pinnata*



Common Name : Flame Tree
Scientific Name : *Delonix regia*



Common Name : Charcoal Tree
Scientific Name : *Trema orientalis*

4.7 DINDOSHI DONGARI



Figure 15: Satellite image of Dindoshi Dongari



Figure 16: Tree cover at Dindoshi Dongari

Dindoshi Dongari Hill is located in Malad East, Mumbai and spread over 138 hectares. It is very close to Tulsi Lake and adjacent to the important heritage site of Kanheri Caves. The area is surrounded by thick forest and is very rich in floral diversity. Dindoshi Dongari Hill has various indigenous community settlements, such as Barik Pairi, Bhatukli Pada, Pimpri Pada, and Appa Pada. The area is a habitat for leopards and spotted deer. While studying the floral diversity, 40 different species of plants, including *Strobilanthes callosa*, which blooms once in seven years and is listed as threatened by the IUCN Red List, were observed. Two of the hills are seen to witness rampant and steady deforestation. Water courses (Oshiwara/ Walbut River) are being altered and blocked by the landowner inside a heavily fenced boundary.

Table no. 8: Plant diversity at Dindoshi Dongari

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Jungle Cork Tree	<i>Holoptelea integrifolia</i>	Tree	Ulmaceae
2	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
3	Indian Ash Tree	<i>Lannea coromandelica</i>	Tree	Anacardiaceae
4	Indrajao	<i>Holarrhena pubescens</i>	Shrub	Apocynaceae
5	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
6	Indian Tragacanth	<i>Sterculia urens</i>	Tree	Malvaceae
7	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
8	Indian Charcoal tree	<i>Trema orientalis</i>	Tree	Cannabaceae
9	Dhaman	<i>Grewia tiliifolia</i>	Tree	Malvaceae
10	Spinous Kino Tree	<i>Bridelia retusa</i>	Tree	Phyllanthaceae
11	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
12	Kumkum	<i>Mallotus phillippensis</i>	Tree	Euphorbiaceae
13	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae
14	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
15	Cocunut	<i>Cocos nucifera</i>	Tree	Arecaceae
16	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
17	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae

18	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae
19	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
20	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
21	Tasmanian Blue Gum	<i>Eucalyptus globulus</i>	Tree	Myrtaceae
22	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
23	Soccer Ball Tree	<i>Morinda pubescens</i>	Shrub	Rubiaceae
24	Indian Mulberry	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
25	Banana	<i>Musa sapientum</i>	herb	Musaceae
26	Haladu	<i>Haldina cordifolia</i>	Tree	Rubiaceae
27	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
28	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
29	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae
30	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	Tree	Fabaceae
31	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
32	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
33	Toddy Palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
34	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
35	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae
36	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
37	Sandpaper Tree	<i>Streblus asper</i>	Tree	Moraceae
38	Bamboo	<i>Bambusoideae sps.</i>	Grass	<i>Poaceae or Gramineae</i>
39	Karavi	<i>Strobilanthes callosa</i>	Shrub	Acanthaceae
40	Flame of Forest	<i>Butea monosperma</i>	Tree	Fabaceae

Dindoshi Dongari



Common Name : Teak
Scientific Name : *Tectona grandis*



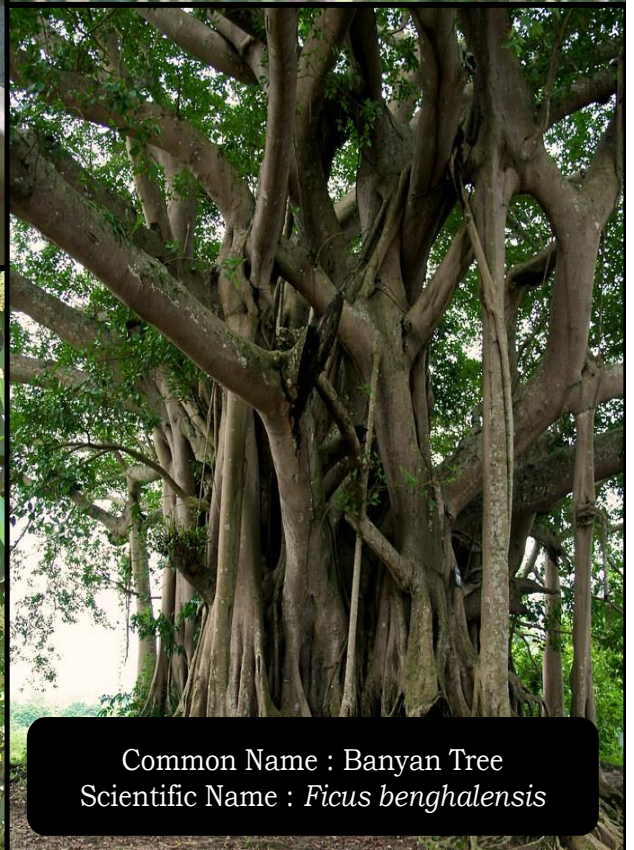
Common Name : Indian Blackberry
Scientific Name : *Syzygium cumini*



Common Name : Haladu
Scientific Name : *Haldina cordifolia*



Common Name : Blackboard Tree
Scientific Name : *Alstonia scholaris*



Common Name : Banyan Tree
Scientific Name : *Ficus benghalensis*

4.8 MADH ISLAND



Figure 17: Satellite Image of Madh Island



Figure 18: Tree cover at Madh Island

Madh is an island located in Malad West in the western suburbs built in the 17th century, the Madh Fort, also known as the Versova Fort, is a small fort in northern Mumbai situated on Madh Island. The green cover in the Madh area is approximately 9.81 hectares, supporting fauna and flora that is a breath of fresh air in the otherwise packed city of Mumbai. The area is bounded by the Arabian Sea to the west and the Malad Creek to the east. The surrounding area also includes a few beaches like Erangel Beach, Dana Pani Beach, Silver Beach, and Aksha Beach. While studying the floral diversity of Madh Island, we found 37 different species of plants, including *Amorphophallus commuatus*.

Table no. 9: Plant diversity at Madh Island

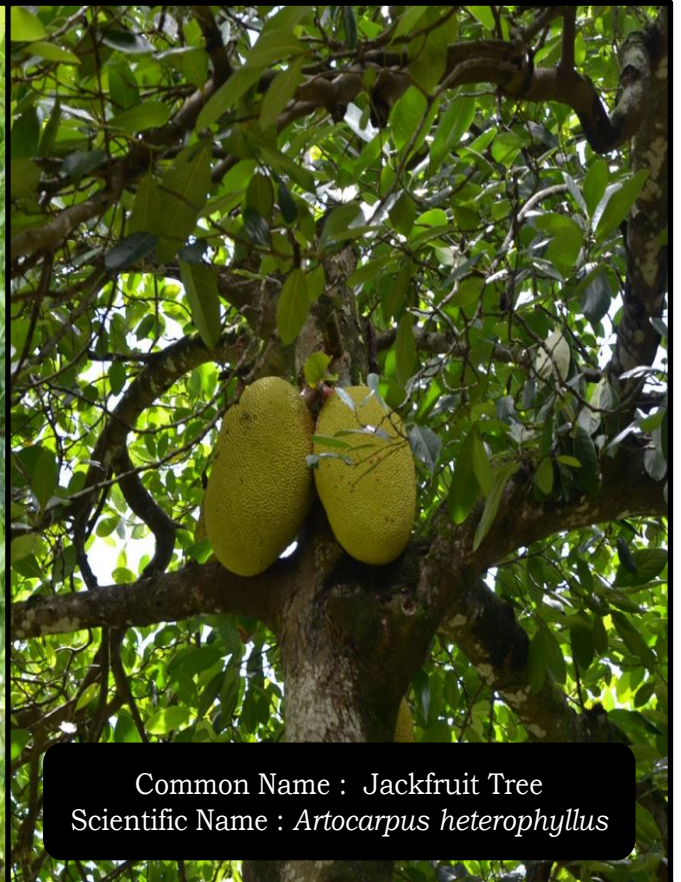
Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Soccer Ball Tree	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
2	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
3	Camel's Foot Tree	<i>Bauhinia purpurea</i>	Tree	Fabaceae
4	Jackfruit	<i>Artocarpus heterophyllus</i>	Tree	Moraceae
5	Toddy Palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
6	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
7	Coconut	<i>Cocos nucifera</i>	Tree	Arecaceae
8	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
9	Copperpod tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
10	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
11	Indian Almond	<i>Terminalia catappa</i>	Tree	Combretaceae
12	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
13	Banyan	<i>Ficus benghalensis</i>	Tree	Moraceae
14	Peepal	<i>Ficus religiosa</i>	Tree	Moraceae
15	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
16	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae

17	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
18	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
19	Hairy fig	<i>Ficus asperrima</i>	Tree	Moraceae
20	Ceylon Iron Wood	<i>Manilkara hexandra</i>	Tree	Sapotaceae
21	Spinous Kino Tree	<i>Bridelia retusa</i>	Tree	Phyllanthaceae
22	Garden Balsam	<i>Impatiens balsamina</i>	Herb	Balsaminaceae
23	Wild Grape	<i>Ampelocissus latifolia</i>	Shrub	Vitaceae
24	Singapore Cherry	<i>Muntingia calabura</i>	Shrub	Muntingiaceae
25	Dragon Stalk yam	<i>Amorphophallus commutatus</i>	Herb	Araceae
27	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
28	Monkeypod Tree	<i>Pithecellobium dulce</i>	Shrub	Fabaceae
29	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
30	Indian Tulip Tree	<i>Thespesia populnea</i>	Tree	Malvaceae
31	Wild Jasmine	<i>Volkameria inermis / Clerodendrum inerme</i>	Shrub	Lamiaceae (Labiatae)
32	Indian Tragacanth	<i>Sterculia urens</i>	Tree	Malvaceae
33	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae
34	Chinese Chaste Tree	<i>Vitex negundo</i>	Shrub	Lamiaceae
35	Sandpaper Tree	<i>Streblus asper</i>	Tree	Moraceae
36	Silver Cockscomb	<i>Celosia argentea</i>	Herb	Amaranthaceae
37	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae

Madh Island



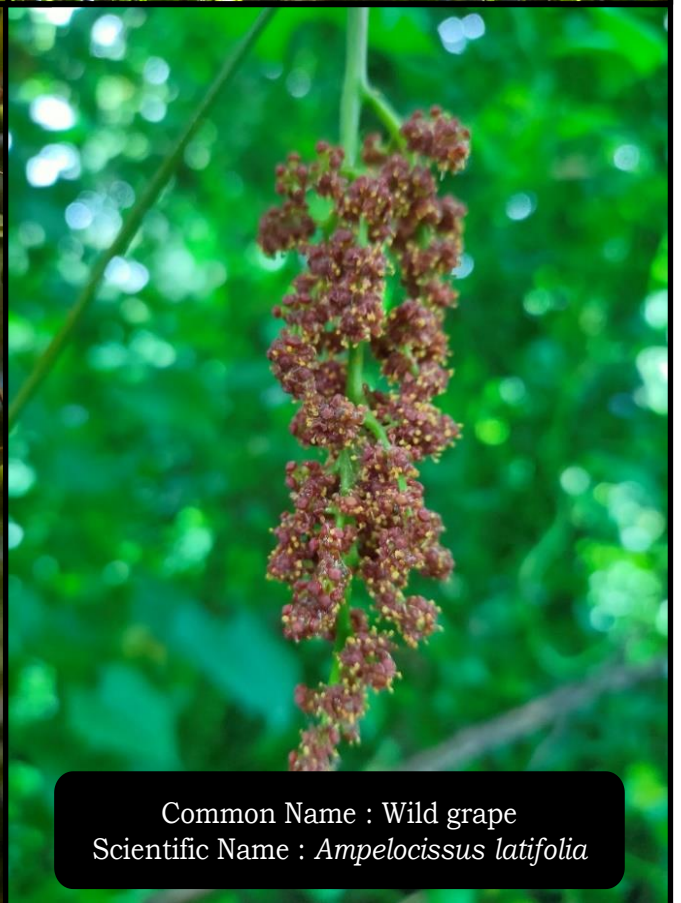
Common Name : Neem
Scientific Name : *Azadirachta indica*



Common Name : Jackfruit Tree
Scientific Name : *Artocarpus heterophyllus*



Common Name : Indian Jujube
Scientific Name : *Ziziphus jujuba*



Common Name : Wild grape
Scientific Name : *Ampelocissus latifolia*

4.9 HOLY TRINITY CHURCH, POWAI

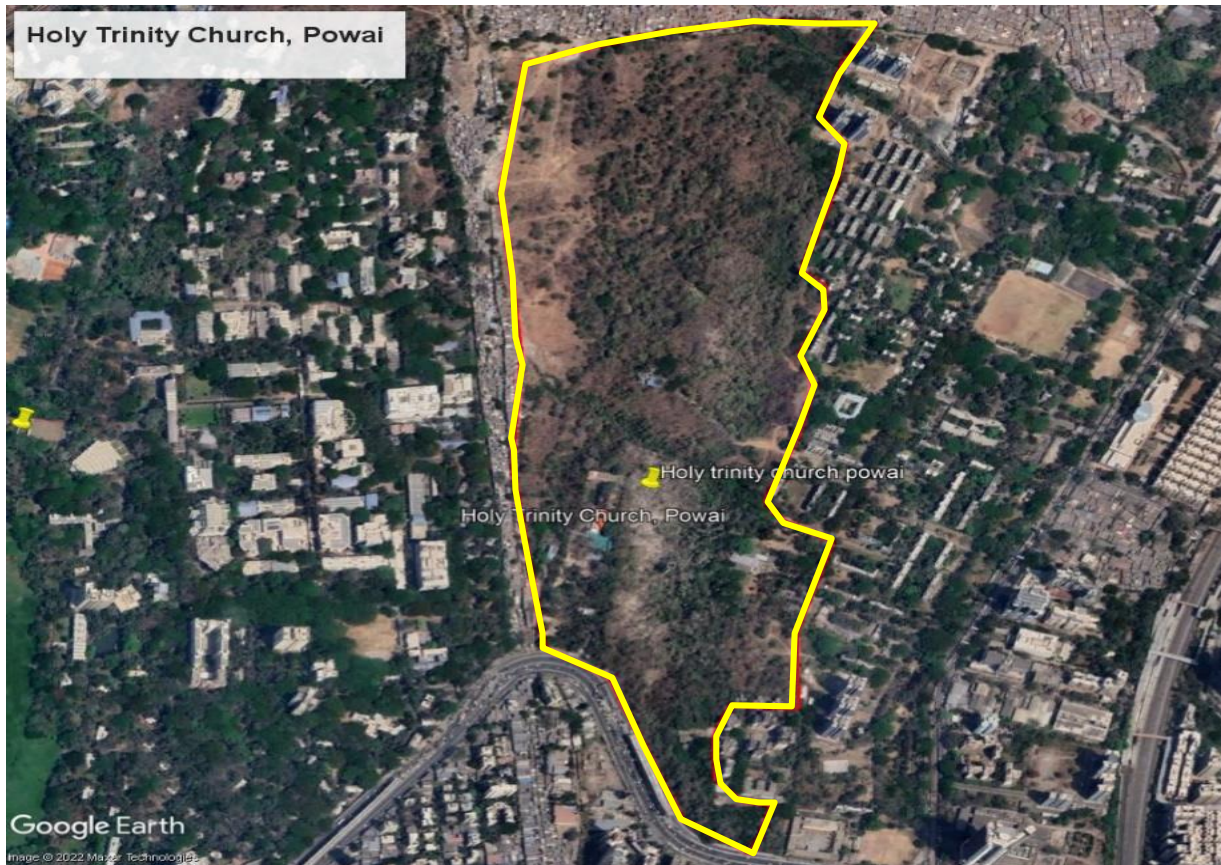


Figure 19: Satellite image of Holy Trinity Church, Powai



Figure 20: Tree cover at Holy Trinity Church, Powai

Holy Trinity Church, or the Most Holy Trinity church, is a Roman Catholic 15th century church that has been rebuilt in its current structure in Powai, a suburb of Mumbai. The forested area of the church is around 48.9 hectares. Unfortunately, the forests are undocumented and face encroachment by slums. Furthermore, they are used for defecation and are frequently grazed upon by goats due to the lack of protective measures. Accurate documentation can provide these forests with the protection they need. While studying the floral diversity of Holy Trinity Church, we found 42 different species of plants.

Table no. 10: Plant diversity at Trinnity Powai Church

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Jungle Cork Tree	<i>Holoptelea integrifolia</i>	Tree	Ulmaceae
2	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
3	Indian Ash Tree	<i>Lannea coromandelica</i>	Tree	Anacardiaceae
4	Indrajao	<i>Holarrhena pubescens</i>	Shrub	Apocynaceae
5	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
6	Indian Tragacanth	<i>Sterculia urens</i>	Tree	Malvaceae
7	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
8	Indian Mulberry	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
9	Dhaman	<i>Grewia tiliifolia</i>	Tree	Malvaceae
10	Spinous Kino Tree	<i>Bridelia spinose</i>	Tree	Phyllanthaceae
11	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
12	Kumkum	<i>Mallotus phillippensis</i>	Tree	Euphorbiaceae
13	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae
14	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
15	Cocunut	<i>Cocos nucifera</i>	Tree	Arecaceae
16	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
17	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
18	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae
19	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
20	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae

21	Tasmanian Blue Gum	<i>Eucalyptus globulus</i>	Tree	Myrtaceae
22	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
23	Soccer Ball Tree	<i>Morinda pubescens</i>	Shrub	Rubiaceae
24	Fish Tail Palm	<i>Caryota urens</i>	Tree	Arecaceae
25	Haladu	<i>Haldina cordifolia</i>	Tree	Rubiaceae
26	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
27	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
28	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae
29	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	Tree	Fabaceae
30	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
31	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
32	Toddy Palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
33	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
34	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae
35	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
36	Sandpaper Tree	<i>Streblus asper</i>	Tree	Moraceae
37	Bamboo	<i>Bambusoideae</i> sps.	Grass	Poaceae or Gramineae
38	North Indian Rosewood	<i>Dalbergia sissoo</i>	Tree	Fabaceae
39	Wild Almond	<i>Sterculia foetida</i>	Tree	Malvaceae
40	Indian Badam	<i>Terminalia catappa</i>	Tree	Combretaceae
41	Banana	<i>Musa sapientum</i>	herb	Musaceae
42	Jackfruit	<i>Artocarpus heterophyllus</i>	Tree	Moraceae

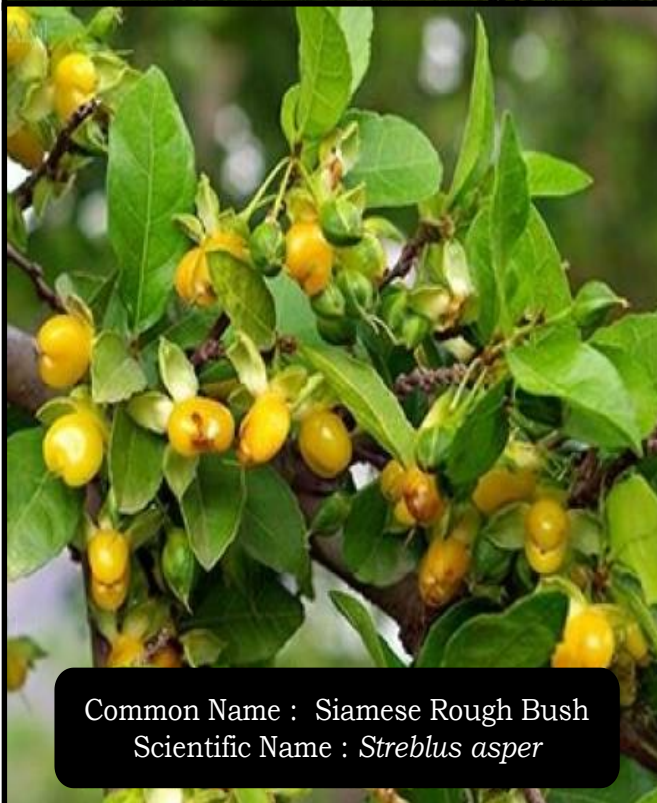
Trinity church , Powai



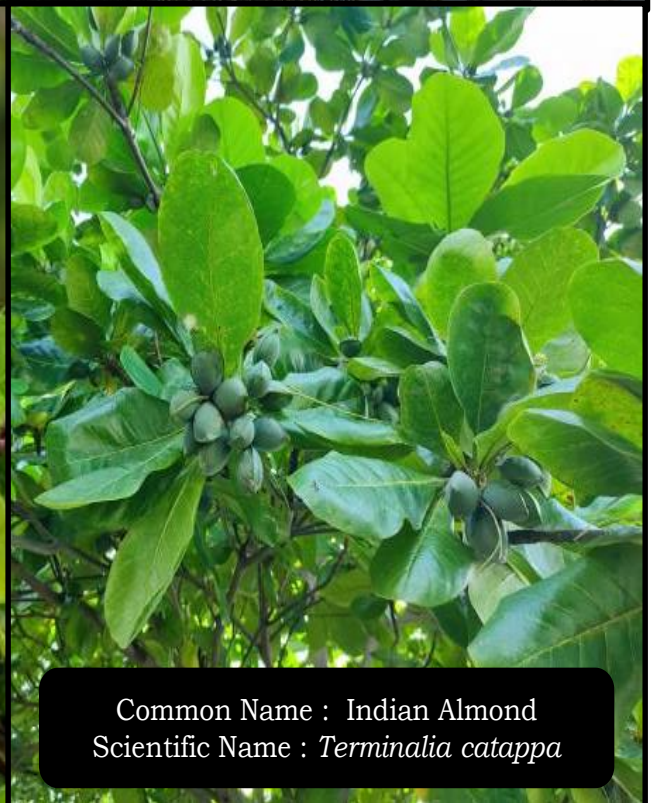
Common Name : Wild Date Palm
Scientific Name : *Phoenix sylvestris*



Common Name : Fish Tail Palm
Scientific Name : *Caryota urens*



Common Name : Siamese Rough Bush
Scientific Name : *Streblus asper*



Common Name : Indian Almond
Scientific Name : *Terminalia catappa*

4.10 GORAI ESSEL PARKING HILL

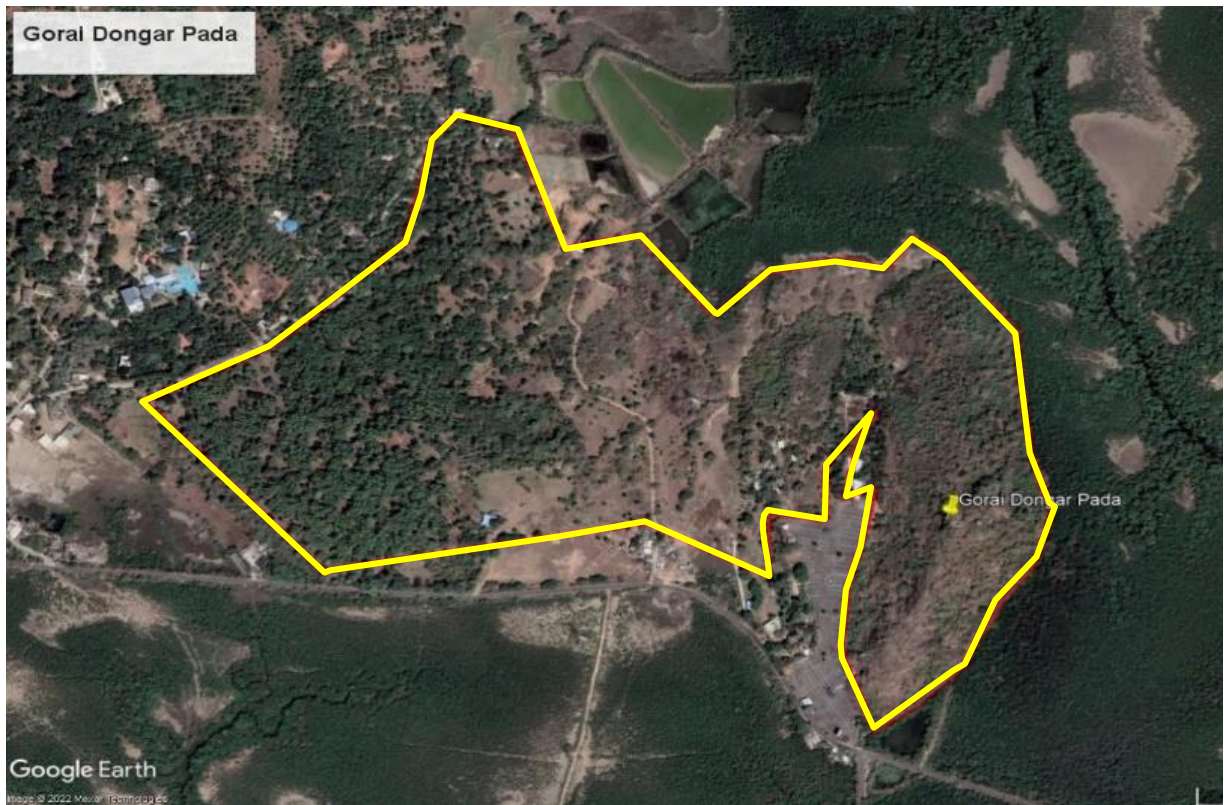


Figure 21: Satellite Image of Gorai Essel Parking Hill



Figure 22: Tree cover at Gorai Essel Parking Hill

Gorai Essel world hill, also known as Gorai Dongar Pada, is found on Dharavi Island. It covers an area of 37.4 hectares. Geographically, the area is located to the south of Uttan village. To its east lie the ecologically significant mangroves of Uttan. Unfortunately, this space has been facing the threat of destruction and encroachment ever since the establishment of the Essel world amusement park in 1989. The park has remained a bone of contention for several years owing to the numerous ecological threats it poses. The parking area on the foothills of Gorai hill may get encroached on in the near future. Therefore, urgent steps are required to protect these regions. A total of 48 plant species were recorded from the area.

Table no. 11: Plant diversity at Gorai Essel Parking Hill

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Jungle Cork Tree	<i>Holoptelea integrifolia</i>	Tree	Ulmaceae
2	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
3	Indian Ash Tree	<i>Lannea coromandelica</i>	Tree	Anacardiaceae
4	Indrajao	<i>Holarrhena pubescens</i>	Shrub	Apocynaceae
5	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
6	Cannon Ball Tree	<i>Couroupita guianensis</i>	Tree	Lecythidaceae
7	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
8	Indian Mulberry	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
9	Dhaman	<i>Grewia tiliifolia</i>	Tree	Malvaceae
10	Spinous Kino Tree	<i>Bridelia retusa</i>	Tree	Phyllanthaceae
11	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
12	Kumkum	<i>Mallotus phillippensis</i>	Tree	Euphorbiaceae
13	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae
14	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
15	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
16	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
17	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae
18	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae

19	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
20	Tasmanian Blue Gum	<i>Eucalyptus globulus</i>	Tree	Myrtaceae
21	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
22	Soccer Ball Tree	<i>Morinda pubescens</i>	Shrub	Rubiaceae
23	Babool	<i>Vachellia nilotica</i>	Tree	Fabaceae
24	Haladu	<i>Haldina cordifolia</i>	Tree	Rubiaceae
25	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
26	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
27	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae
28	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	Tree	Fabaceae
29	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
30	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
31	Toddy palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
32	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
33	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae
34	Royal Palm	<i>Roystonea regia</i>	Tree	Arecaceae
35	Sandpaper Tree	<i>Streblus asper</i>	Tree	Moraceae
36	Bamboo	<i>Bambusoideae sps.</i>	Grass	Poaceae or Gramineae
37	Betel Nut Palm	<i>Areca catechu</i>	Tree	Arecaceae
38	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
39	Wild Almond	<i>Sterculia foetida</i>	Tree	Malvaceae
40	Indian Almond	<i>Terminalia catappa</i>	Tree	Combretaceae
41	Red Bead Tree	<i>Adenanthera pavonina</i>	Tree	Fabaceae
42	Camel's Foot Tree	<i>Bauhinia purpurea</i>	Tree	Fabaceae
43	Star Fruit	<i>Averrhoa carambola</i>	Tree	Oxalidaceae
44	Indian Goosberry	<i>Phyllanthus acidus</i>	Tree	Phyllanthaceae

45	Banana	<i>Musa sapientum</i>	Herb	Musaceae
46	Wild Haldi	<i>Curcuma aromatica</i>	Herb	Zingiberaceae
47	Golden Shower Tree	<i>Cassia fistula</i>	Tree	Fabaceae
48	Glory Lily	<i>Gloriosa Superba</i>	Climber	Colchicaceae



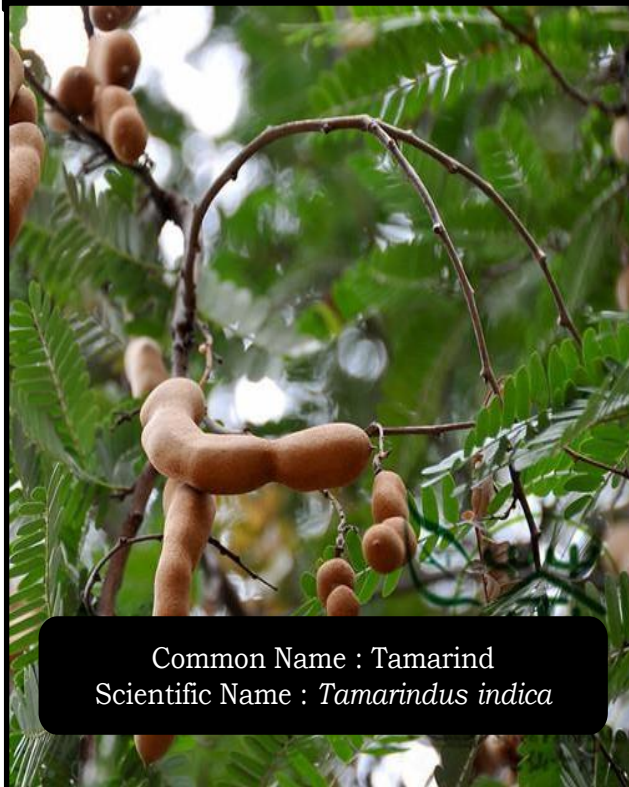
Gorai Essel Parking Hill



Common Name : Sacred Fig Tree
Scientific Name : *Ficus religiosa*



Common Name : Madras Thorn
Scientific Name : *Pithecellobium dulce*



Common Name : Tamarind
Scientific Name : *Tamarindus indica*



Common Name : Glory Lily
Scientific Name : *Gloriosa superba*

4.11 MAHAKALI CAVES



Figure 23: Satellite image of Mahakali Caves



Figure 24: Tree cover at Mahakali Caves

Mahakali Caves in Andheri East are the hidden architectural and historical gems that make the place beautiful to relax and escape the city chaos. The Mahakali Caves, also known as Kondivite Caves, are centuries old and located in Andheri, in the western part of the city of Mumbai. The green cover of Mahakali Caves is spread over 13.7 hectares. While studying the floral diversity of Mahakali caves, we found 35 different species of plants, including *Curcuma aromatica*, which is threatened as per the IUCN Red List category.

Table no. 12: Plant diversity at Mahakali Caves

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Jungle Cork Tree	<i>Holoptelea integrifolia</i>	Tree	Ulmaceae
2	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
3	Indian Ash Tree	<i>Lannea coromandelica</i>	Tree	Anacardiaceae
4	Indrajao	<i>Holarrhena pubescens</i>	Shrub	Apocynaceae
5	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
6	Indian Tragacanth	<i>Sterculia urens</i>	Tree	Malvaceae
7	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
8	Indian Mulberry	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
9	Dhaman	<i>Grewia tiliifolia</i>	Tree	Malvaceae
10	Spinous Kino Tree	<i>Bridelia retusa</i>	Tree	Phyllanthaceae
11	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
12	Kumkum	<i>Mallotus phillippensis</i>	Tree	Euphorbiaceae
13	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae
14	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
15	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
16	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
17	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae
18	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
19	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae

20	Tasmanian Blue Gum	<i>Eucalyptus globulus</i>	Tree	Myrtaceae
21	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
22	Soccer Ball Tree	<i>Morinda pubescens</i>	Shrub	Rubiaceae
23	Fish Tail Palm	<i>Caryota urens</i>	Tree	Arecaceae
24	Haladu	<i>Haldina cordifolia</i>	Tree	Rubiaceae
25	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
26	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
27	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae
28	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	Tree	Fabaceae
29	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
30	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
31	Toddy palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
32	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
33	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae
34	Indian Charcoal Tree	<i>Trema orientalis</i>	Tree	Cannabaceae

Eucalyptus globulus (Tasmanian Blue Gum / Nilgiri)



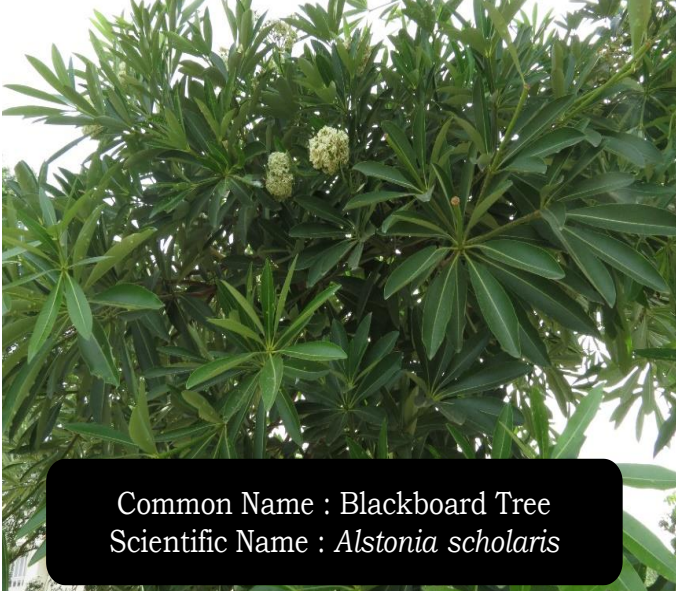
Mahakali Caves



Common Name : Pride of India
Scientific Name : *Lagerstroemia speciosa*



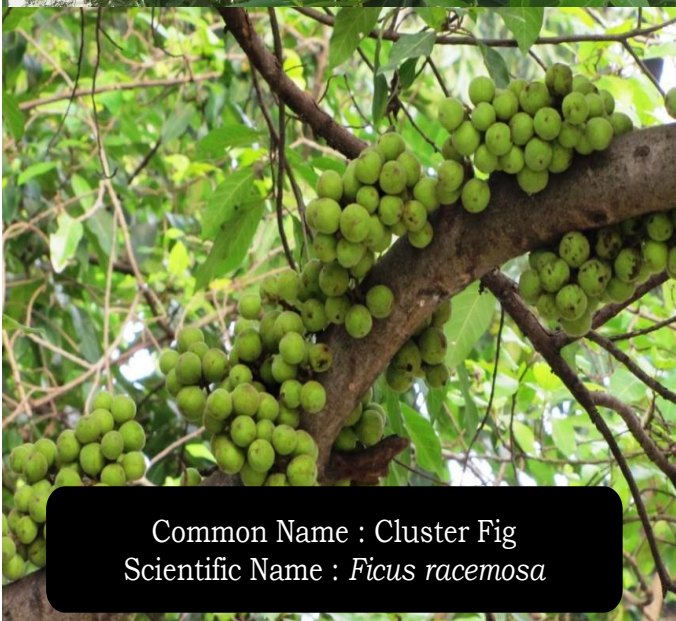
Common Name : Tasmanian Blue Gum
Scientific Name : *Eucalyptus globulus*



Common Name : Blackboard Tree
Scientific Name : *Alstonia scholaris*



Common Name : Charcoal Tree
Scientific Name : *Trema orientalis*



Common Name : Cluster Fig
Scientific Name : *Ficus racemosa*

4.12 TROMBAY HILL BARC



Figure 25: Satellite image of Trombay Hill, BARC



Figure 26: Tree cover at Trombay Hill, BARC

Trombay is one of the seven islands that make up the city of Mumbai. It is located to the northeast of Mumbai. The island possesses a great history of the Portuguese and British eras. Today, the island serves as home to the Bhabha Atomic Research Center. Trombay Hill takes up a large portion of the island on the city's eastern side. The Trombay hill is spread across a 664-hectare area and has a dense green cover. While studying floral diversity, previously research suggest 32 different species of plants, including *Strobilanthes callosa*, which blooms once every seven years and is listed as threatened by the IUCN. The expanse of the hill goes to show that this is a significant green cover in the Mumbai Metropolitan Region. A detailed account of the flora of the region could not be obtained since it is under the control of the BARC which is a high security area prohibited for citizens.

Table no. 13: Plant diversity at Trombay hill BARC

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
2	Silk Cotton Tree	<i>Bombax ceiba</i>	Tree	Bombacaceae
3	Indian Tragacanth	<i>Sterculia urens</i>	Tree	Malvaceae
4	Garden Balsam	<i>Impatiens balsamina</i>	Herb	Balsaminaceae
5	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
6	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
7	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
8	Indian Goosberry	<i>Phyllanthus acidus</i>	Tree	Phyllanthaceae
9	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
10	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
11	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
12	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
13	Tasmanian Blue Gum	<i>Eucalyptus globulus</i>	Tree	Myrtaceae
14	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
15	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
16	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae

17	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
18	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae
19	Indian Almond	<i>Terminalia catappa</i>	Tree	Combretaceae
20	Camel's Foot Tree	<i>Bauhinia purpurea</i>	Tree	Fabaceae
21	Golden Shower Tree	<i>Cassia fistula</i>	Tree	Fabaceae
22	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
23	Giant Milkweed	<i>Calotropis gigantea</i>	Shrub	Apocynaceae
24	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
25	Lantana	<i>Lantana camara</i>	Shrub	Verbenaceae
26	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
27	Flame of Forest	<i>Butea monosperma</i>	Tree	Fabaceae
28	Women's Tongue	<i>Albizia lebbek</i>	Tree	Fabaceae
29	Behada	<i>Terminalia bellirica</i>	Tree	Combretaceae
30	Karavi	<i>Strobilanthes callosa</i>	Shrub	Acanthaceae
31	Chinese Chaste Tree	<i>Vitex negundo</i>	Shrub	Lamiaceae
32	Spinous Kino Tree	<i>Bridelia retusa</i>	Tree	Phyllanthaceae

Strobilanthes callosa (Karavi)



Trombay Hill, BARC



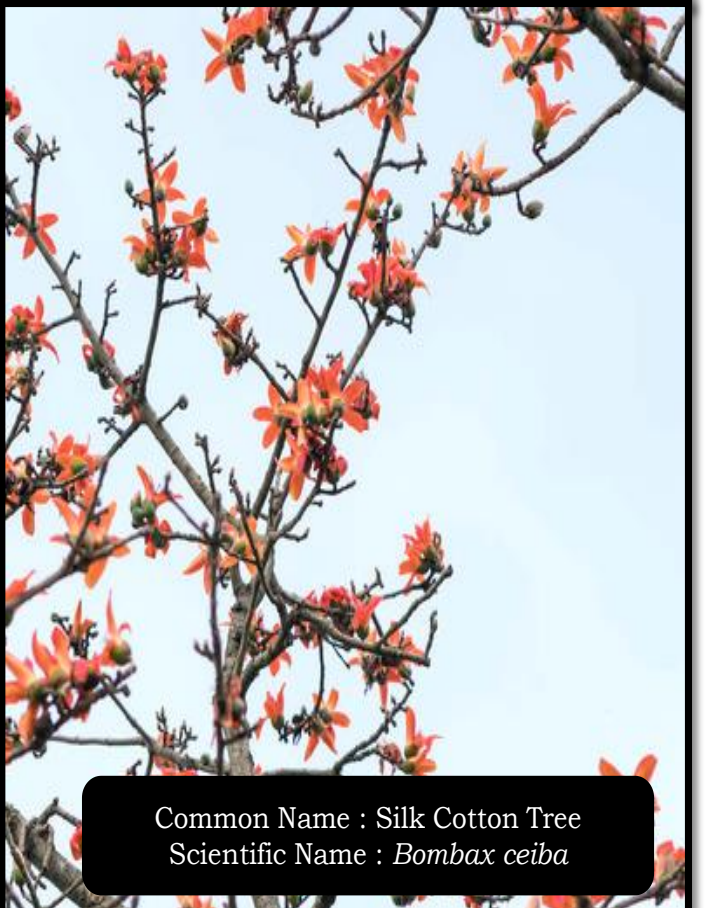
Common Name : Chinese Chaste Tree
Scientific Name : *Vitex negundo*



Common Name : Banyan Tree
Scientific Name : *Ficus benghalensis*



Common Name : Orchid Tree
Scientific Name : *Bauhinia purpurea*



Common Name : Silk Cotton Tree
Scientific Name : *Bombax ceiba*

4.13 HIRANANDANI HELIPAD GARDEN



Figure 27: Satellite image of Hiranandani Helipad Garden



Figure 28: Tree cover at Hiranandani Helipad Garden

Mumbai has been blessed with a range of geographic features. One such feature spreads over 57.7 hectares and is part of the hill ranges of North Mumbai. This particular hill is commonly known as the **Hiranandani Helipad Hill**, also known as Ghatkopar hill, lies to the south of Powai Lake and extends from Ghatkopar to Asalpa Village. The hills offer individuals a leisure spot in an otherwise busy part of the city. In the north area of the hill, one finds condominiums, penthouses, bungalows, and commercial complexes developed by the Hiranandani group in 1986 that have transformed the area into the upmarket township that consists of Powai. Thus, this hill stands as a reminder of what once was in the fast-growing concrete jungle. While studying the floral diversity of Hiranandani Helipad Hill, we found 38 different species of plants.

Table no. 14: Plant diversity at Hiranandani Helipad Garden

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Jungle Cork Tree	<i>Holoptelea integrifolia</i>	Tree	Ulmaceae
2	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
3	Indian Ash Tree	<i>Lannea coromandelica</i>	Tree	Anacardiaceae
4	Indrajao	<i>Holarrhena pubescens</i>	Tree	Apocynaceae
5	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
6	Indian Tragacanth	<i>Sterculia urens</i>	Tree	Malvaceae
7	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
8	Indian Mulberry	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
9	Dhaman	<i>Grewia tiliifolia</i>	Tree	Malvaceae
10	Spinous Kino Tree	<i>Bridelia retusa</i>	Tree	Phyllanthaceae
11	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
12	Kumkum	<i>Mallotus phillippensis</i>	Tree	Euphorbiaceae
13	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae
14	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
15	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
16	Sandpaper Tree	<i>Streblus asper</i>	Tree	Moraceae
17	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae

18	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
19	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
20	Tasmanian Blue Gum	<i>Eucalyptus globulus</i>	Tree	Myrtaceae
21	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
22	Soccer Ball Tree	<i>Morinda pubescens</i>	Shrub	Rubiaceae
23	Indian Goosberry	<i>Phyllanthus acidus</i>	Tree	Phyllanthaceae
24	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
25	Haladu	<i>Haldina cordifolia</i>	Tree	Rubiaceae
26	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
27	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
28	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae
29	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	Tree	Fabaceae
30	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
31	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
32	Toddy palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
33	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
34	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae
35	Indian Charcoal tree	<i>Trema orientalis</i>	Tree	Cannabaceae
36	Bamboo	<i>Bambusoideae sps.</i>	Grass	Poaceae or Gramineae
37	Flame of Forest	<i>Butea monosperma</i>	Tree	Fabaceae
38	Golden Shower Tree	<i>Cassia fistula</i>	Tree	Fabaceae

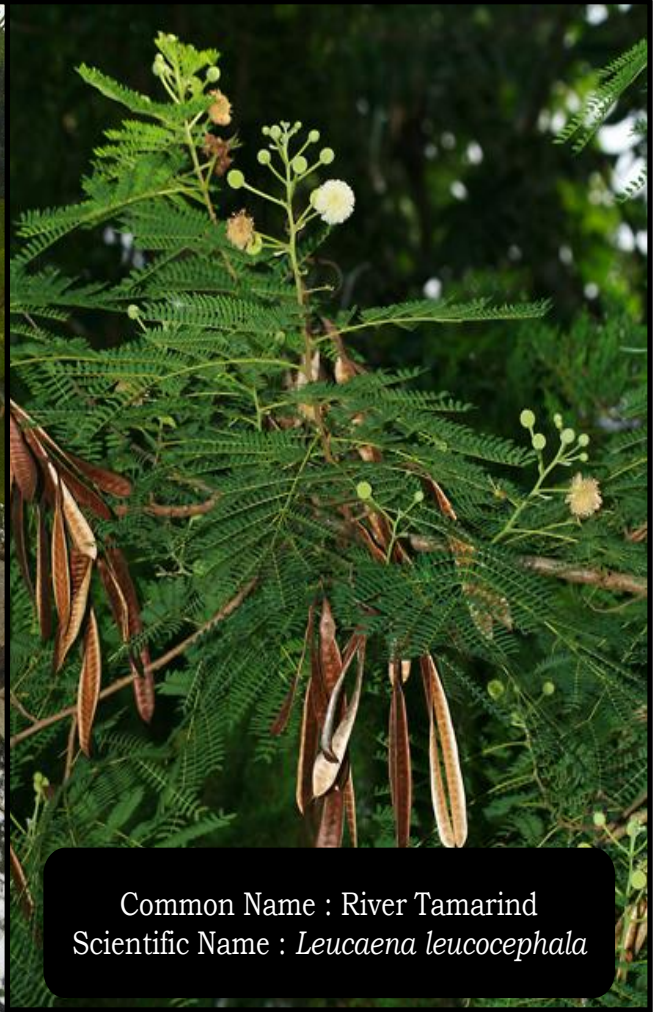


Ceiba pentandra (White Silk Cotton)

Hiranandani Helipad Garden



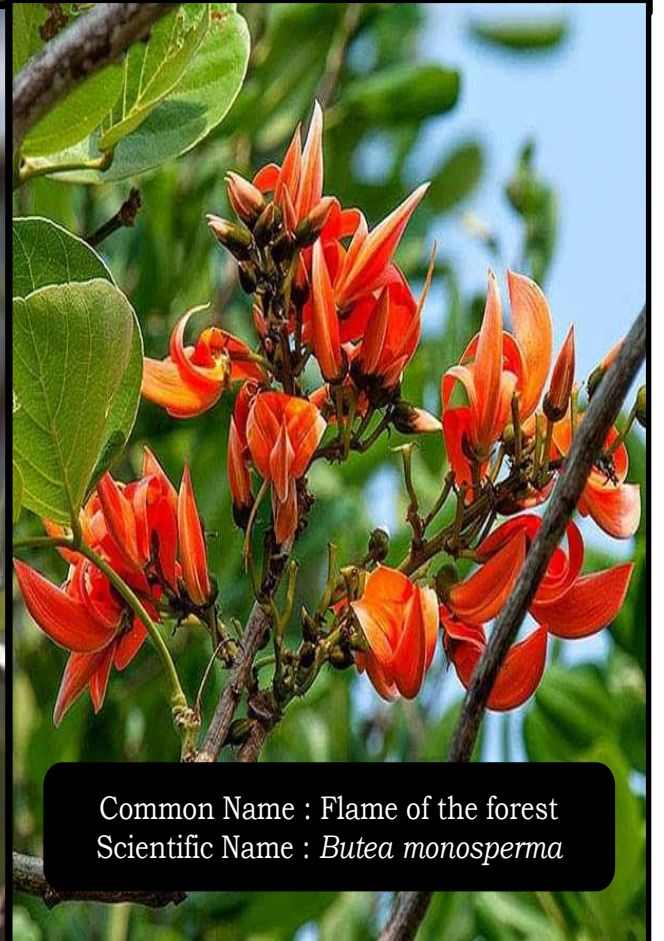
Common Name : Kumkum Tree
Scientific Name : *Mallotus philippensis*



Common Name : River Tamarind
Scientific Name : *Leucaena leucocephala*



Common Name : Haldu
Scientific Name : *Haldinia cordifolia*



Common Name : Flame of the forest
Scientific Name : *Butea monosperma*

4.14 PERU BAGH, VALHER



Figure 29: Satellite image of Peru Baug, Valher



Figure 30: Tree cover at Peru Baug, Valher

The Peru Baug Hill region lies to the south of Vihar Lake and north of IIT Bombay. However, a small region, spreading over 32.1 hectares, is an ecologically critical area as it borders SGNP. Thus, it provides a much-needed buffer zone that protects the flora and fauna of SGNP as well as the Vihar Lake. The Perubaug Hills also act as a buffer to the two important lakes in Mumbai, Powai and Juhu, between which they lie. Buffer zones are gaining importance since they prevent ecologically sensitive areas from being encroached upon. While studying the floral diversity of the Peru Baug Hills, we found 40 different species of plants.

Table no. 15: Plant diversity at Peru Baug, Valher

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Jungle Cork Tree	<i>Holoptelea integrifolia</i>	Tree	Ulmaceae
2	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
3	Indian Ash Tree	<i>Lannea coromandelica</i>	Tree	Anacardiaceae
4	Indrajao	<i>Holarrhena pubescens</i>	Shrub	Apocynaceae
5	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
6	Indian Tragacanth	<i>Sterculia urens</i>	Tree	Malvaceae
7	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
8	Indian Mulberry	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
9	Dhaman	<i>Grewia tiliifolia</i>	Tree	Malvaceae
10	Spinous Kino Tree	<i>Bridelia retusa</i>	Tree	Phyllanthaceae
11	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
12	Kumkum	<i>Mallotus phillippensis</i>	Tree	Euphorbiaceae
13	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae
14	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
15	Coconut	<i>Cocos nucifera</i>	Tree	Arecaceae
16	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
17	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae

18	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae
19	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
20	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
21	Tasmanian Blue Gum	<i>Eucalyptus globulus</i>	Tree	Myrtaceae
22	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
23	Soccer ball Tree	<i>Morinda pubescens</i>	Shrub	Rubiaceae
24	Indian Goosberry	<i>Phyllanthus acidus</i>	Tree	Phyllanthaceae
25	Banana	<i>Musa sapientum</i>	Herb	Musaceae
26	Haladu	<i>Haldina cordifolia</i>	Tree	Rubiaceae
27	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
28	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
29	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae
30	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	Tree	Fabaceae
31	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
32	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
33	Toddy palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
34	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
35	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae
36	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
37	Sandpaper Tree	<i>Streblus asper</i>	Tree	Moraceae
38	Bamboo	<i>Bambusoideae sps.</i>	Grass	Poaceae or Gramineae
39	Wild Almond	<i>Sterculia foetida</i>	Tree	Malvaceae
40	Indian Almond	<i>Terminalia catappa</i>	Tree	Combretaceae

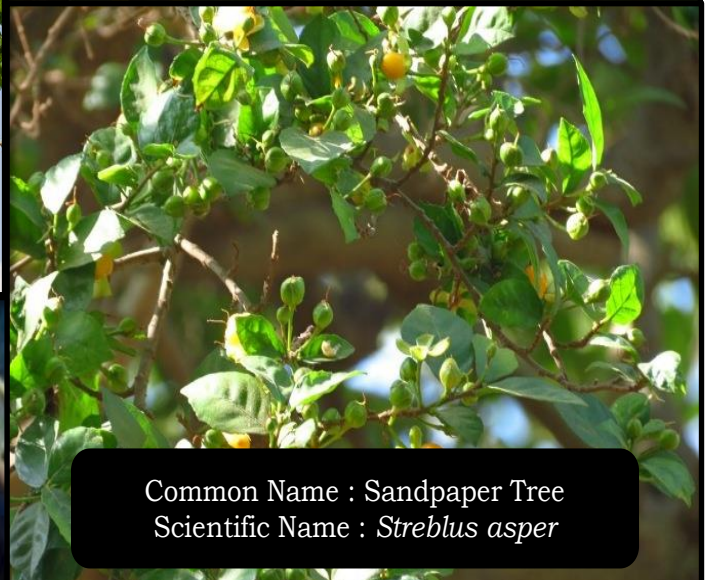
Peru Bagh, Valher



Common Name : White Silk Cotton Tree
Scientific Name : *Ceiba pentandra*



Common Name : Dhaman
Scientific Name : *Grewia tiliifolia*



Common Name : Sandpaper Tree
Scientific Name : *Streblus asper*



Common Name : Mango
Scientific Name : *Mangifera indica*



Common Name : Bidi Leaf Tree
Scientific Name : *Bauhinia racemosa*

4.15 VERAVALI WATER RESERVOIR



Figure 31: Satellite image of Veravali Water Reservoir



Figure 32: Tree cover at Veravali Water Reservoir

Veravali Hill is located in Jogeshwari, Mumbai. The Veravali Hill spreads over 10 hectares of area, but the surrounding areas of the hill have dense green cover and show the presence of a wide variety of floral species, which spreads towards the Veravali Water Reservoir, and considering the dense green cover, we surveyed the total 42 hectares of area to check floral diversity. The survey documented 15 species of different plants. Out of these, 12 were herbaceous plants and 3 were shrubs.

Table no. 16: Plant diversity at Veravali Water Reservoir

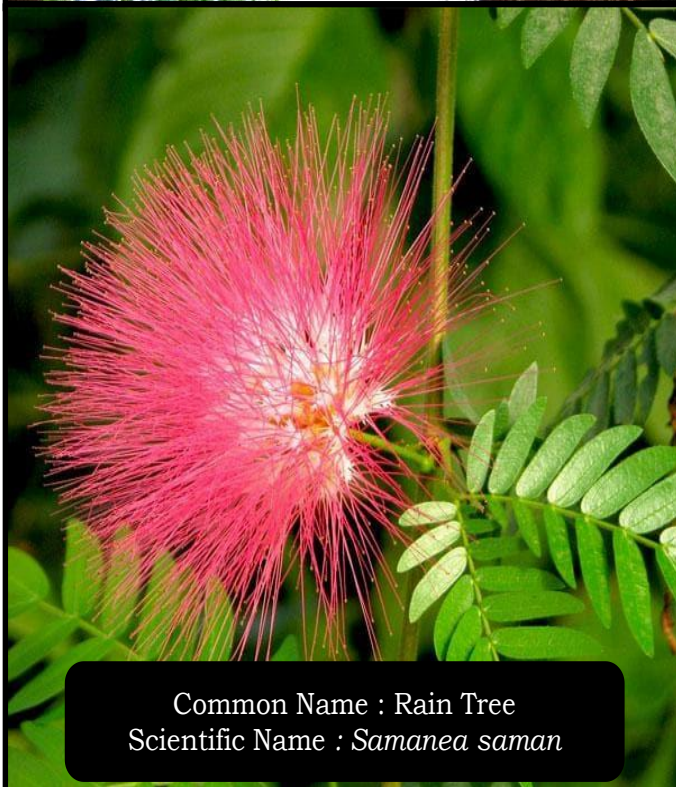
Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Jungle Cork Tree	<i>Holoptelea integrifolia</i>	Tree	Ulmaceae
2	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
3	Indian Ash Tree	<i>Lannea coromandelica</i>	Tree	Anacardiaceae
4	Indrajao	<i>Holarrhena pubescens</i>	Shrub	Apocynaceae
5	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
6	Cannon Ball Tree	<i>Couropita guianensis</i>	Tree	Lecythidaceae
7	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
8	Indian Mulberry	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
9	Dhaman	<i>Grewia tiliifolia</i>	Tree	Malvaceae
10	Spinous Kino Tree	<i>Bridelia retusa</i>	Tree	Phyllanthaceae
11	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
12	Kumkum	<i>Mallotus phillippensis</i>	Tree	Euphorbiaceae
13	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae
14	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
15	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
16	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
17	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae
18	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
19	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
20	Tasmanian Blue Gum	<i>Eucalyptus globulus</i>	Tree	Myrtaceae

21	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
22	Soccer Ball Tree	<i>Morinda pubescens</i>	Shrub	Rubiaceae
23	Fish Tail Palm	<i>Caryota urens</i>	Tree	Arecaceae
24	Haladu	<i>Haldina cordifolia</i>	Tree	Rubiaceae
25	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
26	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
27	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae
28	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	Tree	Fabaceae
29	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
30	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
31	Toddy palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
32	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
33	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae
34	Royal Palm	<i>Roystonea regia</i>	Tree	Arecaceae
35	Sandpaper Tree	<i>Streblus asper</i>	Tree	Moraceae
36	Bamboo	<i>Bambusoideae sps.</i>	Grass	Poaceae or Gramineae
37	Betel Nut Palm	<i>Areca catechu</i>	Tree	Arecaceae
38	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
39	Wild Almond	<i>Sterculia foetida</i>	Tree	Malvaceae
40	Indian Almond	<i>Terminalia catappa</i>	Tree	Combretaceae
41	Red Bead Tree	<i>Adenanthera pavonina</i>	Tree	Fabaceae
42	Camel's Foot Tree	<i>Bauhinia purpurea</i>	Tree	Fabaceae

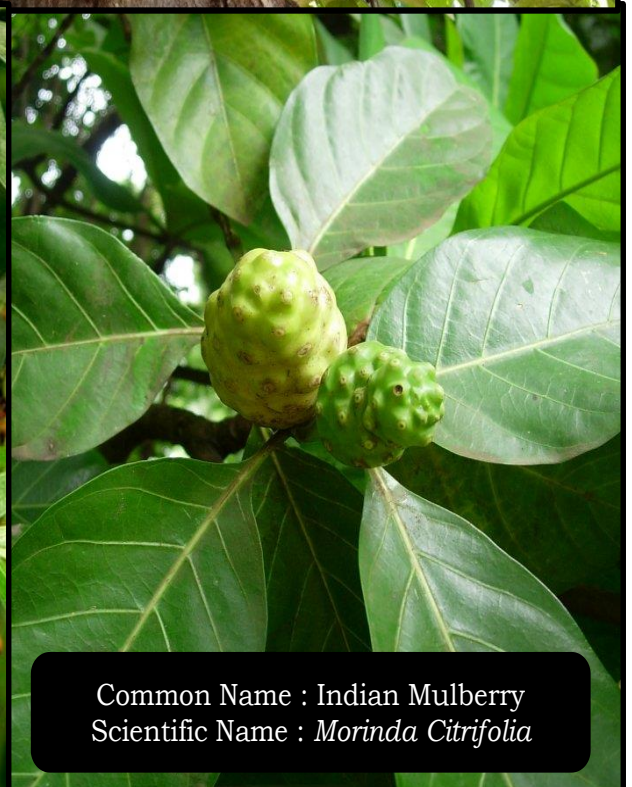
Veravali Water reservoir



Common Name : Cannonball Tree
Scientific Name : *Couroupita guianensis*



Common Name : Rain Tree
Scientific Name : *Samanea saman*



Common Name : Indian Mulberry
Scientific Name : *Morinda Citrifolia*

4.16 SHIPPING CORPORATION OF INDIA CAMPUS, POWAI



Figure 33: Satellite image of Shipping Corporation of India Campus, Powai



Figure 34: Tree cover at Shipping Corporation of India Campus, Powai

SCI Maritime Training Institute (MTI) is an integral part of The Shipping Corporation of India Ltd. (SCI) – the largest Indian Shipping Company. The campus is spread across 45 acres of land in a prime area at shores of Powai Lake. It has two water body supporting the varied biodiversity present within the campus. The campus has a good tree cover with large trees having a height of more than 15 meters. We surveyed the total 47 hectares area to check floral diversity. The survey documented 27 species of different plants. Out of these, 26 were herbaceous plants and 1 shrub. The green cover within the campus is very crucial as it is serving as an oasis for the biodiversity within the city’s concrete desert.

Table no. 17: Plant diversity at Shipping Corporation of India Campus, Powai

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
2	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
3	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae
4	Wild Almond	<i>Sterculia foetida</i>	Tree	Malvaceae
5	Indian Almond	<i>Terminalia catappa</i>	Tree	Combretaceae
6	Betel Nut Palm	<i>Areca catechu</i>	Tree	Arecaceae
7	False Ashoka	<i>Polyalthia longifolia</i>	Tree	Annonaceae
8	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
9	Coconut	<i>Cocos nucifera</i>	Tree	Arecaceae
10	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
11	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
12	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
13	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
14	Indian Goosberry	<i>Phyllanthus acidus</i>	Tree	Phyllanthaceae
15	Peepal	<i>Ficus religiosa</i>	Tree	Moraceae
16	Banana	<i>Musa sapientum</i>	Herb	Musaceae

17	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	Tree	Fabaceae
18	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
19	Copperpod tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
20	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae
21	Fish Tail Palm	<i>Caryota urens</i>	Tree	Arecaceae
22	Custard Apple	<i>Annona reticulata</i>	Shrub	Annonaceae
23	Giant Milkweed	<i>Calotropis gigantea</i>	Shrub	Apocynaceae
24	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
25	Indian Jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
26	Papaya	<i>Carica papaya</i>	Tree	Caricaceae
27	Indian Tulip Tree	<i>Thespesia populnea</i>	Tree	Malvaceae



Ficus religiosa (Sacred Fig/Peepal)

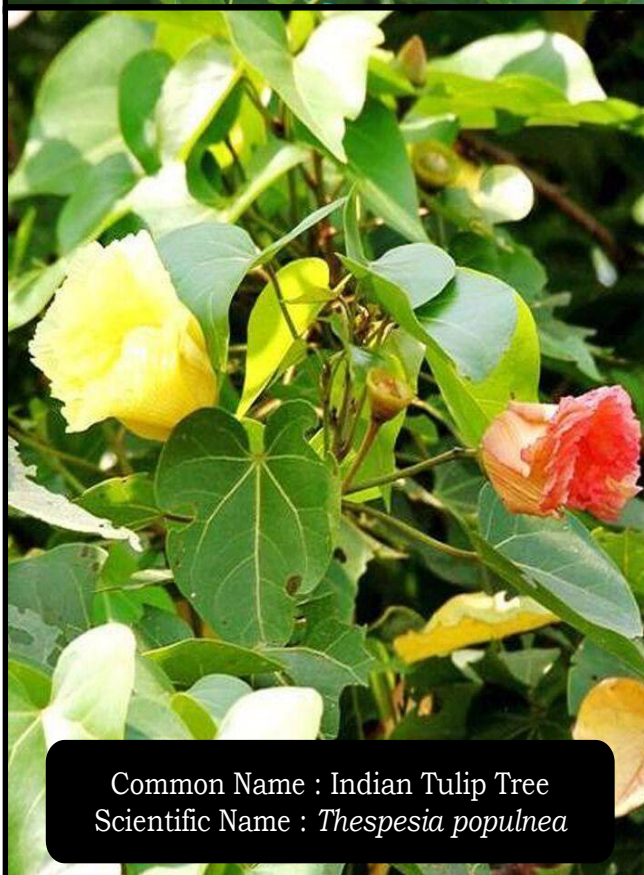
Shipping Corporation of India Campus, Powai



Common Name : Pongam Tree
Scientific Name : *Pongamia pinnata*



Common Name : False Ashoka
Scientific Name : *Polyalthia longifolia*



Common Name : Indian Tulip Tree
Scientific Name : *Thespesia populnea*



Common Name : Hairy Fig
Scientific Name : *Ficus hispida*

4.17 ROYAL PALMS, AAREY



Figure 35: Satellite image of Royal Palms, Aarey



Figure 36: Tree cover at Royal Palms, Aarey

Royal Palms, Aarey is a forest which is within the eco-sensitive zone of Sanjay Gandhi National Park (SGNP). The Royal Palms is located in the vicinity of Aarey Colony locality of Goregaon (East) in Marol-Maroshi revenue village which is in the western suburb of Mumbai city. The total area of Royal Palms is spread over 240 acres. Being near the Aarey Colony, the Royal Palms are surrounded by lush green surroundings. During the survey of the Royal Palms we documented flora belonging to 73 different species. The documented area shares a common boundary with the Sanjay Gandhi National Park. Originally, this appears to have been a dense forest in contiguity to the national park but deforestation has happened and buildings have come up. But even today a large forest exists on the boundry of this township.

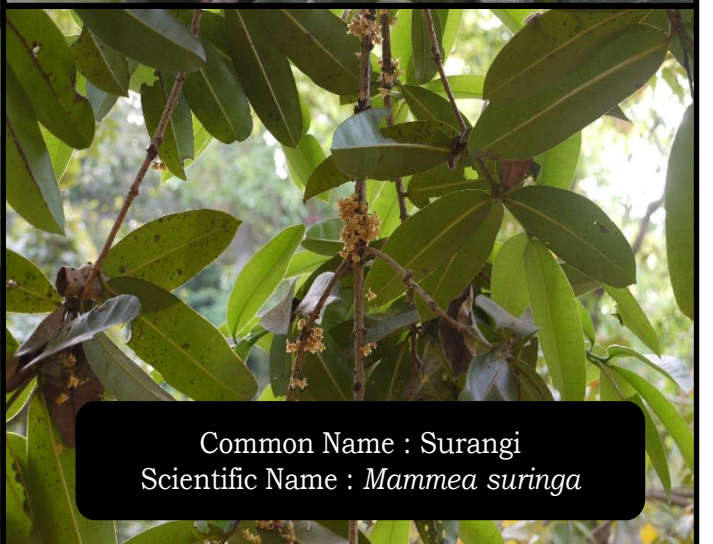
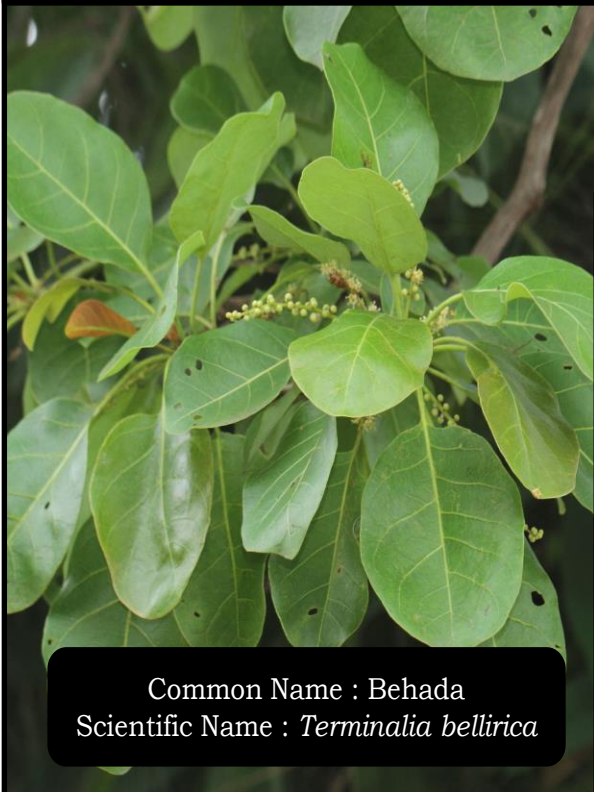
Table no. 18: Plant diversity at Royal Palms, Aarey

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Jungle Cork Tree	<i>Holoptelea integrifolia</i>	Tree	Ulmaceae
2	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
3	Indian Ash Tree	<i>Lannea coromandelica</i>	Tree	Anacardiaceae
4	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae
5	Black Catechu	<i>Acacia catechu</i>	Tree	Fabaceae
6	Dhaman	<i>Grewia tiliifolia</i>	Tree	Malvaceae
7	Kumkum	<i>Mallotus phillippensis</i>	Tree	Euphorbiaceae
8	Custard Apple	<i>Annona reticulata</i>	Shrub	Annonaceae
9	Soccer Ball Tree	<i>Morinda pubescens</i>	Shrub	Rubiaceae
10	Babool	<i>Vachellia nilotica</i>	Tree	Fabaceae
11	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
12	Tasmanian Blue Gum	<i>Eucalyptus globulus</i>	Tree	Myrtaceae
13	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
14	Bamboo	<i>Bambusoideae sps.</i>	Grass	Poaceae or Gramineae
15	Betel Nut Palm	<i>Areca catechu</i>	Tree	Arecaceae
16	White Silk Cotton	<i>Ceiba pentandra</i>	Tree	Malvaceae
17	Indian Blackberry	<i>Syzygium cumini</i>	Tree	Myrtaceae
18	Flame of Forest	<i>Butea monosperma</i>	Tree	Fabaceae

19	Indrajao	<i>Holarrhena pubescens</i>	Shrub	Apocynaceae
20	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
21	Common Fig	<i>Ficus carica</i>	Tree	Moraceae
22	Indian Jujube	<i>Ziziphus mauritiana</i>	Shrub	Rhamnaceae
23	Indian Mulberry	<i>Morinda citrifolia</i>	Shrub	Rubiaceae
24	Royal Palm	<i>Roystonea regia</i>	Tree	Arecaceae
25	Spinous Kino Tree	<i>Bridelia spinose</i>	Tree	Phyllanthaceae
26	Peepal	<i>Ficus religiosa</i>	Tree	Moraceae
27	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
28	Hairy Fig	<i>Ficus hispida</i>	Tree	Moraceae
29	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae
30	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
31	Rain Tree	<i>Samanea saman</i>	Tree	Fabaceae
32	Wild Tamarind	<i>Leucaena leucocephala</i>	Tree	Fabaceae
33	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
34	Royal Palm	<i>Roystonea regia</i>	Tree	Arecaceae
35	Sandpaper Tree	<i>Streblus asper</i>	Tree	Moraceae
36	Haladu	<i>Haldina cordifolia</i>	Tree	Rubiaceae
37	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
38	Golden Shower Tree	<i>Cassia fistula</i>	Tree	Fabaceae
39	Wild Haldi	<i>Curcuma aromatica</i>	Herb	Zingiberaceae
40	North Indian Rosewood	<i>Dalbergia sissoo</i>	Tree	Fabaceae
41	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
42	Indian Goosberry	<i>Phyllanthus acidus</i>	Tree	Phyllanthaceae
43	Banana	<i>Musa sapientum</i>	Herb	Musaceae
44	Wild Date Palm	<i>Phoenix sylvestris</i>	Tree	Arecaceae
45	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
46	Wild Almond	<i>Sterculia foetida</i>	Tree	Malvaceae
47	Indian Almond	<i>Terminalia catappa</i>	Tree	Combretaceae

48	Red Bead Tree	<i>Adenanthera pavonina</i>	Tree	Fabaceae
49	Camel's Foot Tree	<i>Bauhinia purpurea</i>	Tree	Fabaceae
50	Star Fruit	<i>Averrhoa carambola</i>	Tree	Oxalidaceae
51	Coconut	<i>Cocos nucifera</i>	Tree	Arecaceae
52	Bidi Leaf Tree	<i>Bauhinia racemosa</i>	Tree	Fabaceae
53	Pride of India	<i>Lagerstroemia speciosa</i>	Tree	Lythraceae
54	Jackfruit	<i>Artocarpus heterophyllus</i>	Tree	Moraceae
55	Karvand	<i>Carissa carandas</i>	Shrub	Apocynaceae
56	Arjun Tree	<i>Terminalia arjuna</i>	Tree	Combretaceae
57	Silk Cotton Tree	<i>Bombax ceiba</i>	Tree	Bombacaceae
58	Indian Tragacanth	<i>Sterculia urens</i>	Tree	Malvaceae
59	Garden Balsam	<i>Impatiens balsamina</i>	Herb	Balsaminaceae
60	Lantana	<i>Lantana camara</i>	Shrub	Verbenaceae
61	Behada	<i>Terminalia bellirica</i>	Tree	Combretaceae
62	Karavi	<i>Strobilanthes callosa</i>	Shrub	Acanthaceae
63	Chinese Chaste Tree	<i>Vitex negundo</i>	Shrub	Lamiaceae
64	Surangi	<i>Mammea suriga</i>	Tree	Calophyllaceae
65	Spinous Kino Tree	<i>Bridelia retusa</i>	Tree	Phyllanthaceae
67	Pride of barbado	<i>Caesalpinia pulcherrima</i>	Tree	Fabaceae
68	Fish Tail Palm	<i>Caryota urens</i>	Tree	Arecaceae
69	Indian Cherry	<i>Cordia dichotoma</i>	Tree	Boraginaceae
70	Golden Champa	<i>Michelia champaca</i>	Tree	Magnoliaceae
71	Kadam	<i>Neolamarckia cadamba</i>	Tree	Rubiaceae
72	Papaya	<i>Carica papaya</i>	Tree	Caricaceae
73	Wood Apple	<i>Aegle marmelos</i>	Tree	Rutaceae

Royal Palms, Aarey



4.18 ST.PIUS X COLLEGE, GOREGOAN



Figure 37: Satellite image of St.Pius X Church and College

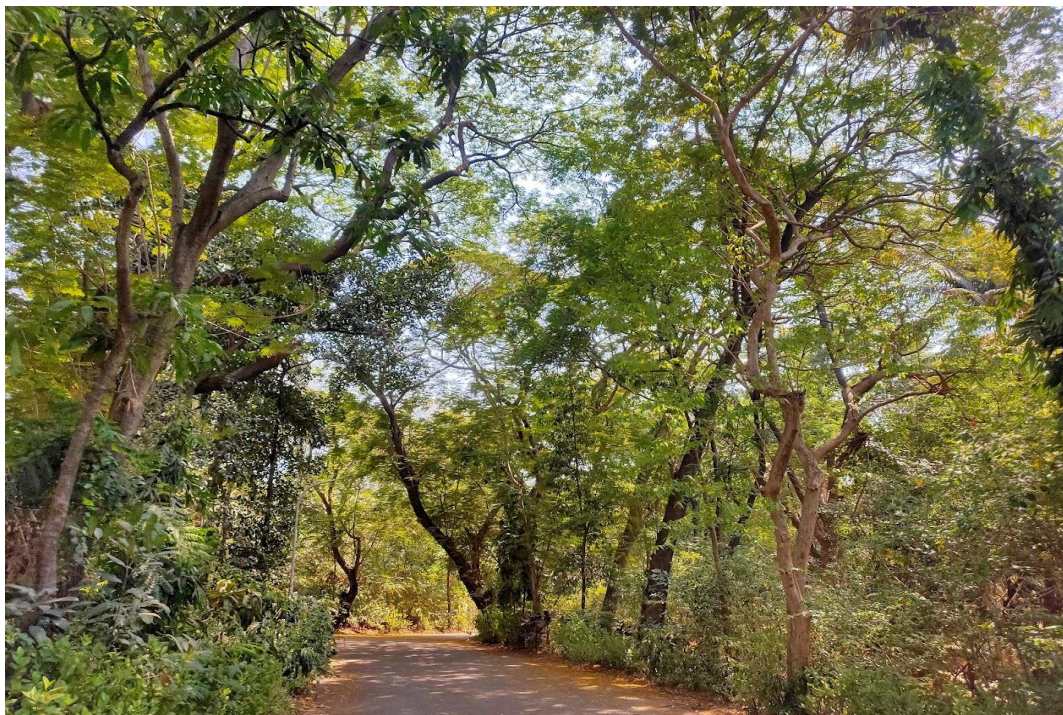


Figure 38: Tree cover at St.Pius X Church and College

St. Pius X College is archdiocesan seminary of Bombay located in Goregoan. The St. Pius college is affiliated to St. Peter's Pontifical Institute Bangalore, for the B.Th.. St. Pius college and church has a tree cover spanning across 10.3 hectares. The college was established in the year 1960. During the study 31 species of flora were recorded in the vicinity of the church. The area can be considered as a continuation of the forest found in Aarey Colony that is separated by the Western Express Highway.

Table no. 19: Plant diversity at St.Pius X College, Goregoan

Sr. No.	Name of Plant	Botanical Name	Habit	Family
1	Sacred Fig	<i>Ficus religiosa</i>	Tree	Moraceae
2	Jackfruit	<i>Artocarpus heterophyllus</i>	Tree	Moraceae
3	Rain tree	<i>Samanea saman</i>	Tree	Fabaceae
4	Copperpod Tree	<i>Peltophorum pterocarpum</i>	Tree	Fabaceae
5	Fish tail palm	<i>Caryota urens</i>	Tree	Arecaceae
6	False Ashoka	<i>Polyalthia longifolia</i>	Tree	Annonaceae
7	Flame Tree	<i>Delonix regia</i>	Tree	Fabaceae
8	Cluster Fig	<i>Ficus racemosa</i>	Tree	Moraceae
9	Teak	<i>Tectona grandis</i>	Tree	Lamiaceae
10	Charcoal tree	<i>Trema orientalis</i>	Tree	Cannabaceae
11	Cocoanut	<i>Cocos nucifera</i>	Tree	Arecaceae
12	Mango	<i>Mangifera indica</i>	Tree	Anacardiaceae
13	Indian Almond	<i>Terminalia catappa</i>	Tree	Combretaceae
14	Toddy Palm	<i>Borassus flabellifer</i>	Tree	Arecaceae
15	Indian jujube	<i>Ziziphus mauritiana</i>	Tree	Rhamnaceae
16	Cannon ball tree	<i>Couroupita guianensis</i>	Tree	Lecythidaceae
17	Golden Shower Tree	<i>Cassia fistula</i>	Tree	Fabaceae
18	Neem	<i>Azadirachta indica</i>	Tree	Meliaceae

19	Indian Banyan Tree	<i>Ficus benghalensis</i>	Tree	Moraceae
20	African Tulip	<i>Spathodea campanulata</i>	Tree	Bignoniaceae
21	Tamarind	<i>Tamarindus indica</i>	Tree	Fabaceae
22	Pongam Tree	<i>Pongamia pinnata</i>	Tree	Fabaceae
23	Indian Tulip Tree	<i>Thespesia populnea</i>	Tree	Malvaceae
24	Monkeypod Tree	<i>Pithecellobium dulce</i>	Tree	Fabaceae
25	Pride of India	<i>Lagerstroemia speciose</i>	Tree	Lythraceae
26	Lantana	<i>Lantana camara</i>	Shrub	Verbenaceae
27	Kadam	<i>Neolamarckia cadamba</i>	Tree	Rubiaceae
28	Garden Balsam	<i>Impatiens balsamina</i>	Shrub	Balsaminaceae
29	Silk Cotton Tree	<i>Bombax ceiba</i>	Tree	Bombacaceae
30	Blackboard Tree	<i>Alstonia scholaris</i>	Tree	Apocynaceae
31	Chinese chaste Tree	<i>Vitex negundo</i>	Shrub	Lamiaceae



Mammea suriga (Surangi)

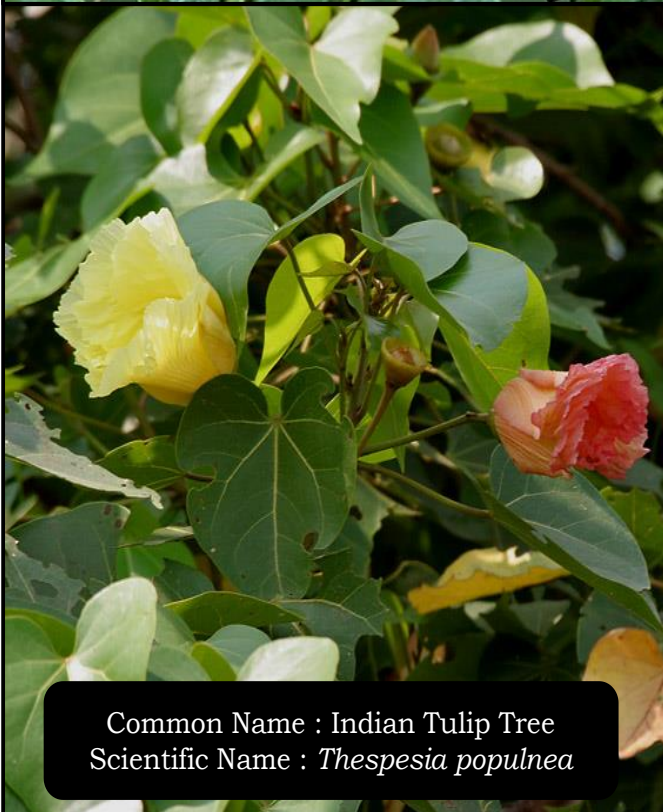
St. Pius X College



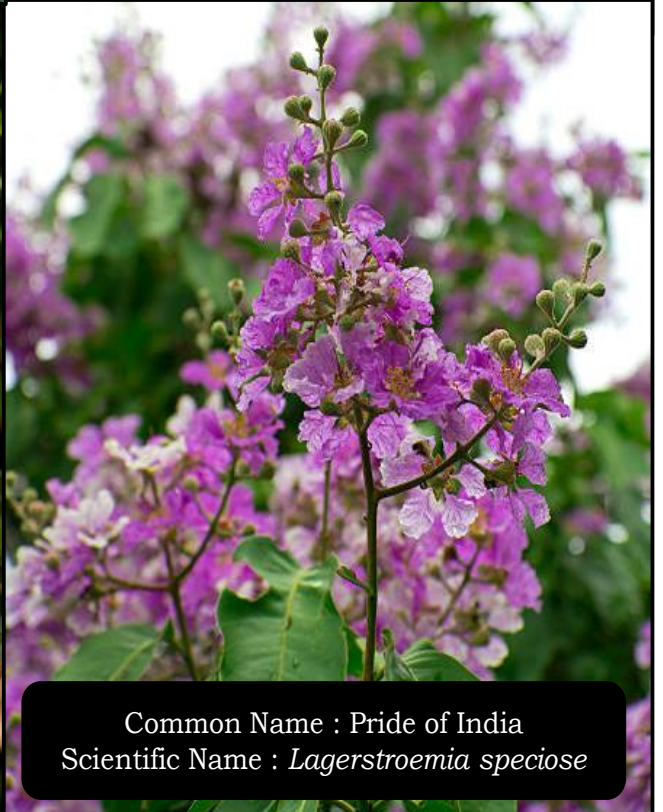
Common Name : African Tulip Tree
Scientific Name : *Spathodea campanulata*



Common Name : Chinese Chaste Tree
Scientific Name : *Vitex negundo*



Common Name : Indian Tulip Tree
Scientific Name : *Thespesia populnea*



Common Name : Pride of India
Scientific Name : *Lagerstroemia speciosa*

5. RESULTS AND ANALYSIS

Forests are vital ecosystems, providing priceless natural resources that benefit humanity in a variety of ways. Several factors are to blame for the global loss of forest cover. The permanent removal of forest cover with subsequent transformation to non-forested land is majorly responsible for deforestation. Although the GoI enunciated several initiatives, including the formulation of a forest policy, as early as 1952, for the sustainable management of forests, the country's forests have suffered serious depletion over the years. Swift actions are required to protect the remaining forests from being deforested and bring the non-protected and unrecognized forests under protection.

The present study deals with the documentation of the unrecognized forest cover in Mumbai along with its floristic study. A subsequent floristic survey was carried out on 18 locations with considerable green cover identified using GIS. Due to these locations being spread across Mumbai city, they show varied topographical features. Due to the varied topography, vast plant diversity was observed in these regions. Floristic diversity within these regions includes grasses, herbs, shrubs, and angiospermic plants. The floral diversity of 111 species was documented during the study. Out of the 111 species observed, there were 5 herbs, 14 shrubs, 3 climbers, 1 grass, 1 fern and 87 angiospermic trees distributed in 42 families. The species richness of the Indian subcontinent is around 47,513 plant species (Singh & Dash, 2014), out of approximately 0.4 million previously known in the world, accounting for up to 11.4% of world flora

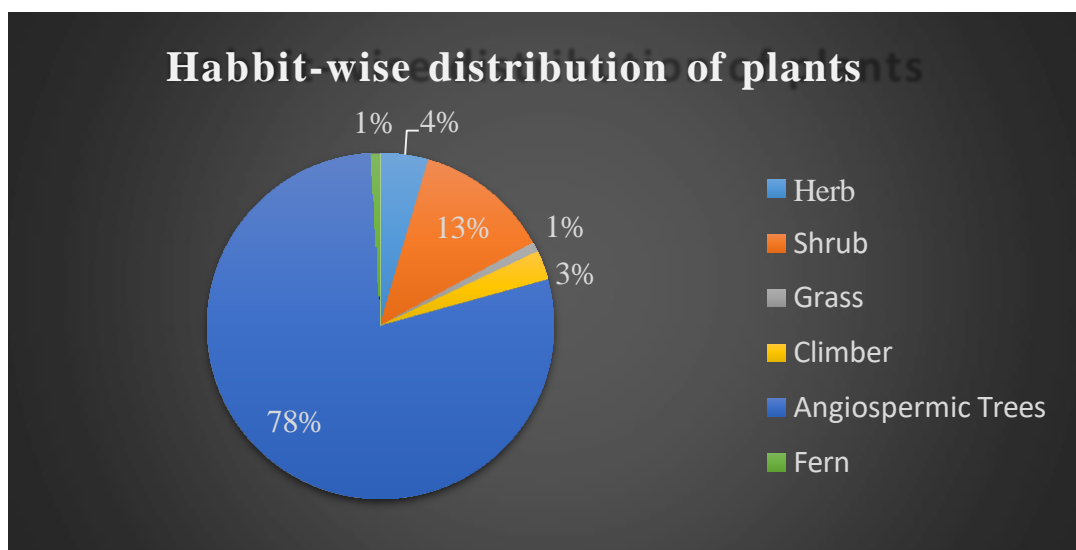


Figure 37: Habitat-wise comparison of Plants

There are approximately 257 plant families in India, of which 213 are dicotyledonous and 44 are monocotyledonous. The 42 families into which the plants in the study area belonged are Annonaceae, Acanthaceae, Anacardiaceae, Apocynaceae, Araceae, Arecaceae, Balsaminaceae, Bignoniaceae, Bombacaceae, Boraginaceae, Cannabaceae, Capparaceae, Casuarinaceae, Combretaceae, Euphorbiaceae, Fabaceae, Lamiaceae (Labiatae), Lecythidaceae, Lythraceae, Malvaceae, Meliaceae, Moraceae, Muntingiaceae, Musaceae, Myrtaceae, Oxalidaceae, Phyllanthaceae,

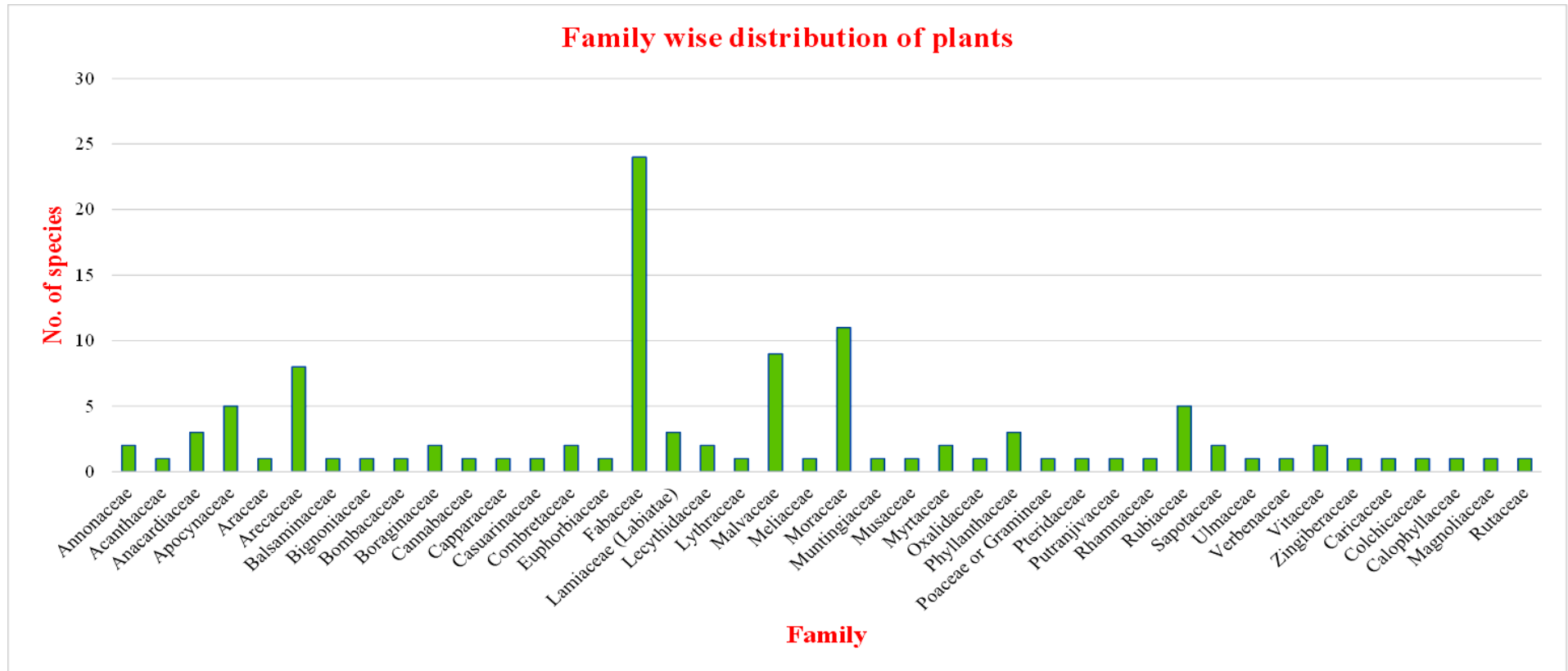


Figure 38: Family wise distribution of plants

Poaceae or Gramineae, Pteridaceae, Putranjivaceae, Rhamnaceae, Rubiaceae, Sapotaceae, Ulmaceae, Verbenaceae, Vitaceae, Zingiberaceae, Caricaceae, Colchicaceae, Calophyllaceae, Magnoliaceae and Rutaceae families respectively. The dominant families were Fabaceae (24 species), Moraceae (11 species), Malvaceae (9 species), Aracaceae (8 species), Apocynaceae (5 species), Rubiaceae (5 species), Phyllanthaceae (3 species), Lamiaceae or Labiatae (3 species), Anacardiaceae (3 species), Vitaceae (2 species), Sapotaceae (2 species), Myrtaceae (2 species), Lecythidaceae (2 species), Combretaceae (2 species), Boraginaceae (2 species), Annonaceae (2 species) and the remaining families showed single member belonging to them.

Schedule forest Plant species like *Mangifera indica*, *Bambusoideae* sps., *Borassus flabellifer*, *Bauhinia racemose*, *Butea monosperma*, *Tectona grandis*, *Azadirachta indica*, *Ficus carica*, *Dalbergia sissoo*, *Strobilanthes callosa*, *Curcuma Aromatica*, *Amorphophallus commutatus* have been recorded in the study area. (Guidelines India State Forest Report, Maharashtra, 2019).

The total geographical area of Mumbai accounts for 603.4 sq. km, of which 110.77 sq.km. are occupied by notified forests as per the State of Forest Report 2021. The areas under consideration from the study point of view account for a total of 13.78 sq. km. suggesting an increase of 12.34% rise in forest cover within the city. Out of the 18 study locations, Trombay Hills, Bhabha Atomic Research Centre has the highest geographical extent (664 hectares), followed by IIT, Mumbai (156 hectares), Dindoshi Dongri (138 hectares), Dharavali Adivasi Pada (58.7 hectares) and Hiranandani Helipad Hill (57.7 hectares). Holy Trinity Church, Powai, Suryanagar Hill, Vikhroli, Gorai Essel Parking Hill and Peru Baug Valhar had an area of between 30 to 50 hectares. The rest of the locations had a geographical extent of less than 22 hectares. St. Pius Church and College had the lowest area of 10.3 hectares in comparison to the other 17 sites.

The area with the highest number of species, i.e., 73 plant species, was Royal Palm, Aarey followed by IIT, Mumbai (50 plant species), followed by Gorai Essel Parking Hill (48 Plant species) and Dharavali Adivasi Pada (45 plant species). Areas like Dindoshi Dongari Hills, Dr. Babasaheb Ambedkar Garden, Holy Trinity Church, Veravali Water Reserviour, Peru Baug, Dindoshi Dongari, Ismail Yusuf College, Mahakali Caves, Madh Island, St. Pius Church and College and Sion Fort had a plant diversity greater than 31 species.

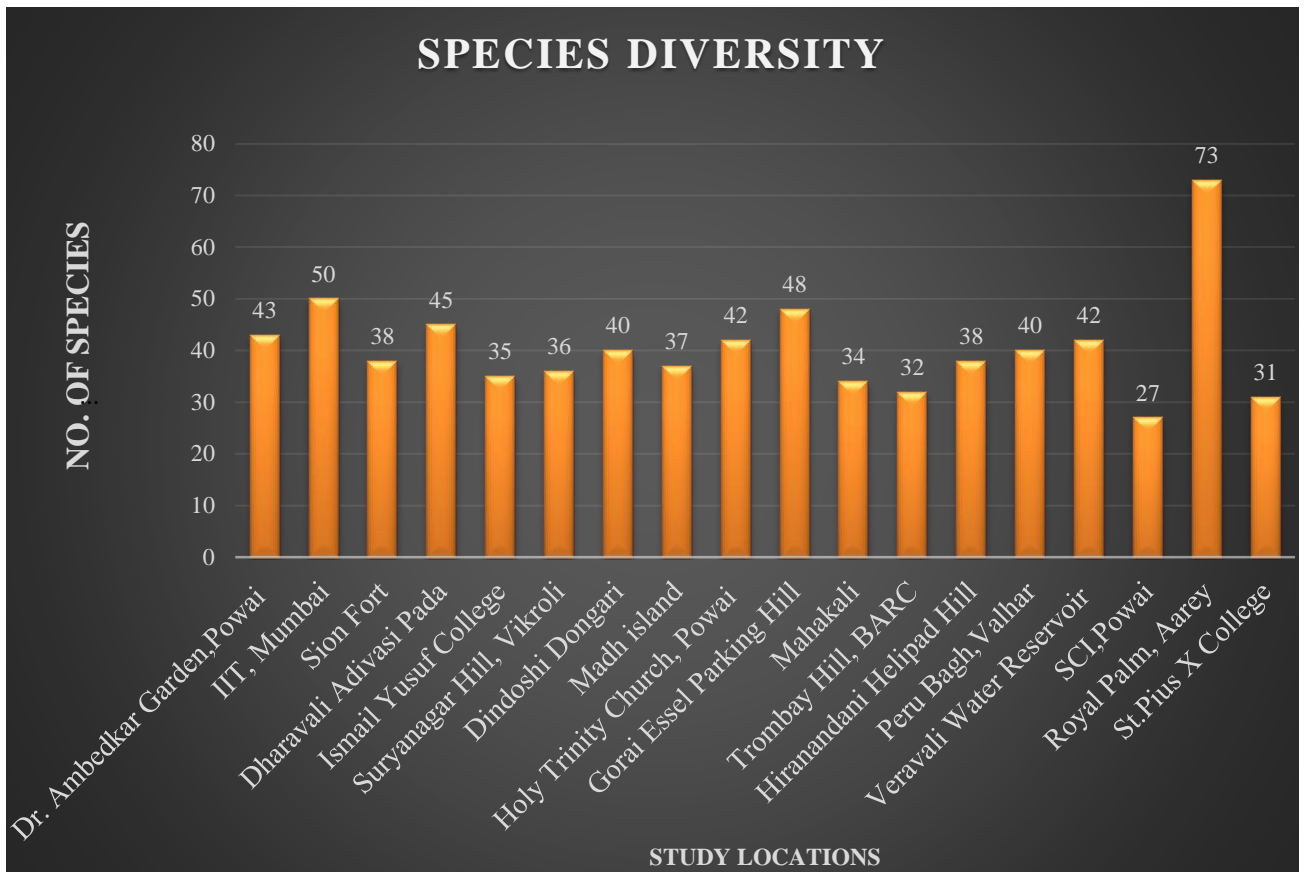


Figure 39: Species diversity within the study locations

It can be seen that the 18 selected areas have a good diversity of plant species in comparison to their geographical extent. Such diverse areas within the metropolitan limit where the majority of the existing forest cover is under threat of deforestation must be protected and maintained so as to ensure a healthy life for the upcoming generations.

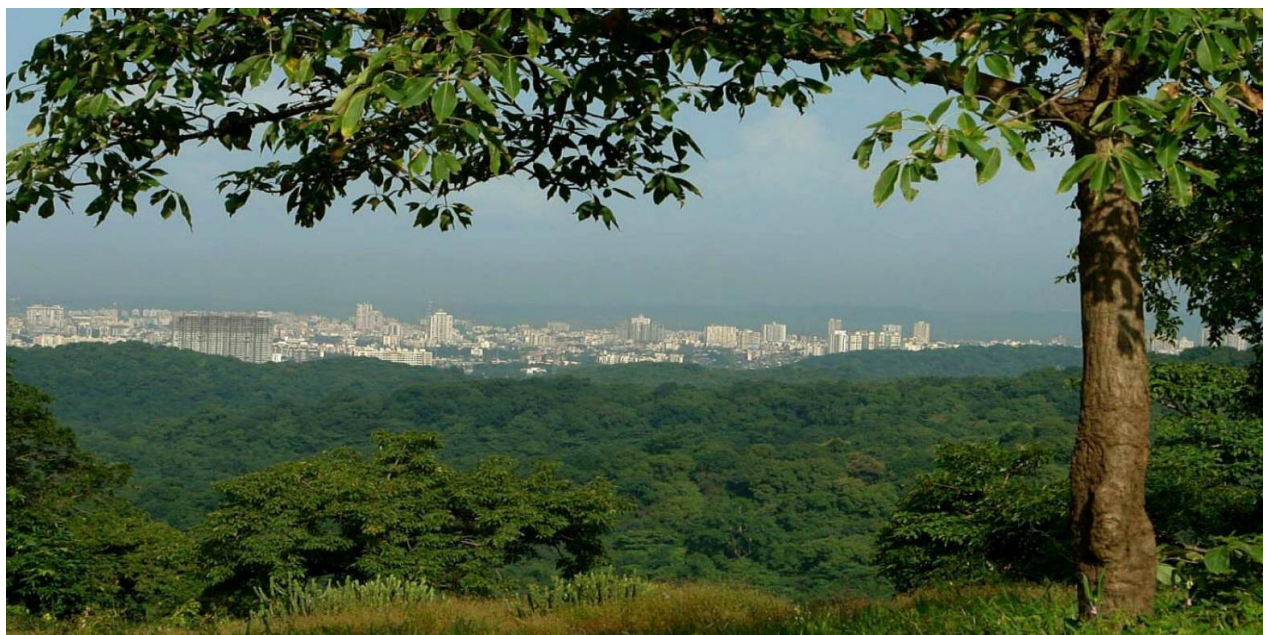


Figure 40: Tree cover within Mumbai

5. CONCLUSION:

“A forest shares a history which each tree remembers even after it has been felled.”– Anne Michaels. Since the Stone Age, forests have been providing mankind with resources to fulfil their basic needs. With time, greed more often than needs of man initiated the destruction of forests. There has been thoughtless destruction and conversion of forests for non-forestry purposes. In a city like Mumbai these last standing forests are the natural shields, the very entities that keep the city livable. Choking under air pollution and battling warmer temperatures with each passing year, the city owes its existence to these scattered forests that lie neglected, abandoned, unrecognized, uncared and unappreciated. Greenwashing on paper does not translate into ground reality. A 100 saplings cannot replace the ecological services provided by one full grown tree. The coastal forests of Mumbai are home to garbage landfills. Trees on the roads have died or have become skeletal structures thanks to the mindless chopping of branches citing safety concerns. This coupled with concretization has resulted in steady depletion of shade and habitat for biodiversity. Moreover, a decline in forest cover could have a significant impact on the environment and the quality of life in most cities. If Mumbai has to be livable in terms of human health and support for biodiversity it is imperative that these forests get protection from felling and from being sacrificed for various reasons. The Mumbai climate action plan, a much publicized document, does not seem to reflect the need to notify and protect these vital forest areas that help fight climate change. Experience tell us that project proponents override the ground realities and instead systematically bulldoze the forest areas simply because the forest are ‘not notified’.

History has demonstrated how the forests of Aarey were opened up for plunder, citing the reason that the region of Aarey was not a “recognized or notified” forests. It is the duty of the state to identify and protect forests using all available means. Forests are treasures and life support systems and not paper weights to be moved around from one location to another. Inter-generational equity cannot be diminished or destroyed. The children of tomorrow will also own these forests. To take it away from them is unpardonable. Before all is lost, we appeal through this report to all the governmental bodies to protect and conserve the unrecognized and unidentified forests of the Mumbai region.

The present study attempted to take a step towards ensuring that green spaces in the city are recognized and accorded the protection and care they deserve. It is evident from the study that Mumbai has been bestowed with abundant resources that nurture and enrich the lives of its inhabitants. A total of 18 areas bestowed with good plant diversity, accounting for an additional 13.68 sq. km. were identified. If these areas are brought under protection, an additional area of 12.34 % can be added to the tally of already existing forested area in Mumbai.

In addition to highlighting these important unrecognized and unaccounted for forest areas, we hope that this report lays the groundwork for similar studies across cities in India. Almost all urban cities are reeling under severe heat wave and air pollution. Mumbai is blessed with a unique landscape and tremendous biodiversity thanks to its forests. The time to appreciate and protect it has arrived and this must be done lest “development” come knocking and demands the needless sacrifice of these landscapes simply because they are “not notified “forests. This report is an attempt to help the state to fulfil its constitutional obligations towards conservation, we have done our part its over to the state.

"Forests are a depiction of the successful, fruitful relation of the vegetation with abiotic factors, the fauna and flora that depend on it. A system that works efficiently and smoothly in the absence of human interventions"

-Stalin D.



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