Azim Premji University

CAMPUS BIODIVERSITY REGISTER 2024 - 25

Azim Premji University,
Bengaluru Campus

Compiled by the
School of Climate Change
and Sustainability

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Image credits: Syed Hazeem Qadri, Shruthi Mukalala, Kinshuk Ghosh

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Section 3: BioBlitz
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About this report

The Azim Premji University campus in Bengaluru is in the peri-urban landscape of Sarjapura and extends currently across 90 acres. The campus includes academic blocks with classrooms and labs, seminar halls, a library, student and guest residences, an open-air amphitheatre, an indoor sports complex and outdoor playgrounds.

But the campus is more than just these spaces used by members and students.

The campus also has a variety of trees and plants that we have carefully chosen, planted and tended with care. And making the greenery their home is a biodiversity that includes birds, small mammals, reptiles, insects and spiders. As the trees, most of which are still quite young, grow, we hope that an increasing number of creatures, big and small, will make this campus their home amidst the foliage and undergrowth.

In this report, we hope to make a beginning of documenting the biodiversity on campus and continue monitoring the floral and faunal species in the years to come. We have included here the following flora and fauna

- Trees
- Plants and shrubs
- Insects
- Spiders
- Birds
- Mammals
- Reptiles

We have put together this information from multiple sources. The students of the BSc in Environmental Science and Sustainability major of the 2023 batch documented the plants, shrubs, insects, spiders, birds and mammals as part of a BioBlitz activity in one of their core courses.

We compiled the snake data from the snake incident reports shared by the Infrastructure Management Function (IMF) and members of the campus security team. Members of the School of Climate Change and Sustainability (SCS) collected data of tree species in one zone of the campus with the help of student assistants.

This report is thus the output of the collective efforts of many of us at the university.

Our aim in putting together this information is twofold. First, it is a small beginning in systematically compiling biodiversity data about the campus as part of the SCS environmental monitoring efforts. For example, doing the tree census, we aim to calculate in the carbon sequestered by the trees on the campus, and monitor how this changes. Second, through this process that involves multiple members of the campus community, we hope to engender a sense of place or stewardship of the campus.

This is especially true keeping in mind our students, for whom the campus is not just an academic space but also a residence for several years.

We have used field guides, peer-reviewed journal papers, books on the environment, newspaper and blog articles, and a range of references for the secondary data. We have not included these references in this report, but they are available with us in case anyone is interested. This is a work in progress, and there may be errors in the data we have put together from different sources—and we hope you will let us know any corrections or even suggestions by writing to us at info.sccs@apu.edu.in

Section 1

Trees on Campus

Zone A

The Azim Premji University campus in Bengaluru has a diversity of tree species that have been steadily growing since the campus became functional in 2021. We have initiated a systematic tree census where we are recording details of the species, measuring the height and the girth of the trees, and noting the GPS location.

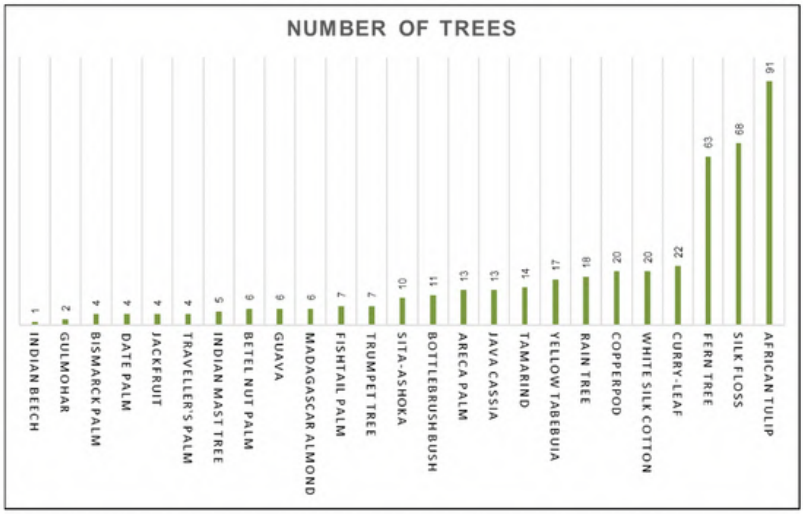
We began by looking at the campus tree data that has been compiled and maintained by members of the IMF team, who play a critical role in taking care of the premises, including its landscaping. The landscaping team maintains a database of trees planted in the **four zones—A, B, C and D—**into which the campus is at present divided.

We began with the **tree census of Zone A** extending across an area of 4,486 sq m that was undertaken between April 2024 and September 2024. The process of surveying the trees involved several steps. The species was first cross-checked against the list provided by IMF. The latitude and longitude of each tree were recorded using the GPS map camera or Angular Camera app. We measured the girth of the tree using a measuring tape at a height of 1.3 m from the base of the trunk, keeping in mind factors such as slope, and whether the trunk is slanting, bifurcating, or has buttress roots. We measured the height of the tree using a metre scale holding the camera parallel to the tree to capture an accurate image.

What we present here are details of the tree census for Zone A, along with information and interesting titbits about the species which we have compiled using secondary data sources. You can find these species in multiple locations across campus as well.

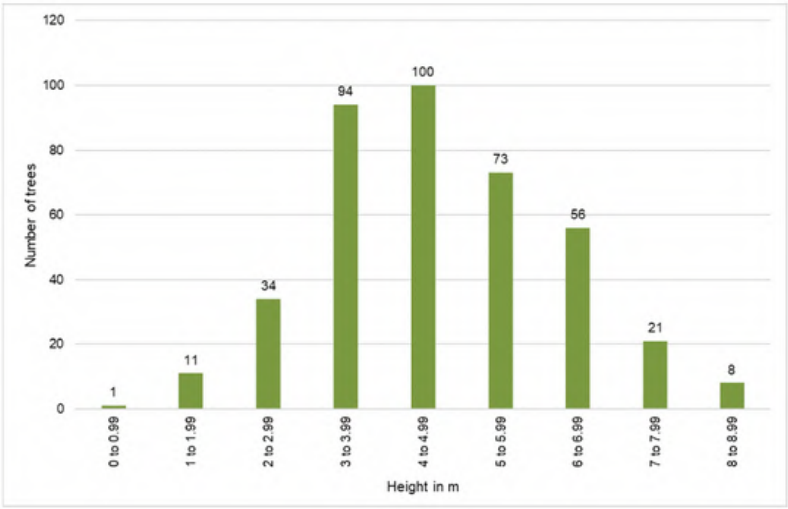
A total of **436 trees of 25 species** were recorded from Zone A. The African tulip numbering 91 was the most common tree in this zone followed by the silk floss numbering 68. Both are quite striking during the flowering season–the African tulip with its reddish-orange flowers shaped like a tulip and the silk floss with its flowers in more muted shades of pink.

Common name	Scientific name	Number of trees
African Tulip	*Spathodea campanulata*	91
Areca Palm	*Chrysalidocarpus lutescens*	13
Betel Nut Palm	*Areca catechu*	6
Bismarck Palm	*Bismarckia nobilis*	4
Bottlebrush	*Melaleuca linearis*	11
Copperpod	*Peltophorum pterocarpum*	20
Curry-leaf	*Bergera koenigii*	22
Date Palm	*Phoenix sylvestris*	4
Fern Tree	*Filicium decipiens*	63
Fishtail Palm	*Caryota urens*	7
Guava	*Psidium guajava*	6
Gulmohar	*Delonix regia*	2
Indian Beech	*Pongamia pinnata*	1
Indian Mast Tree	*Monoon longifolium*	5
Jackfruit	*Artocarpus heterophyllus*	4
Java Cassia	*Cassia javanica*	13
Madagascar Almond	*Terminalia mantaly*	6
Rain Tree	*Samanea saman*	18
Silk Floss	*Ceiba speciosa*	68
Sita-Ashok	*Saraca asoca*	10
Tamarind	*Tamarindus indica*	14
Traveller's Palm	*Ravenala madagascariensis*	4
Trumpet Tree	*Tabebuia rosea*	7
White Silk Cotton	*Ceiba pentandra*	20
Yellow Tabebuia	*Tabebuia aurea*	17
Total		**436**



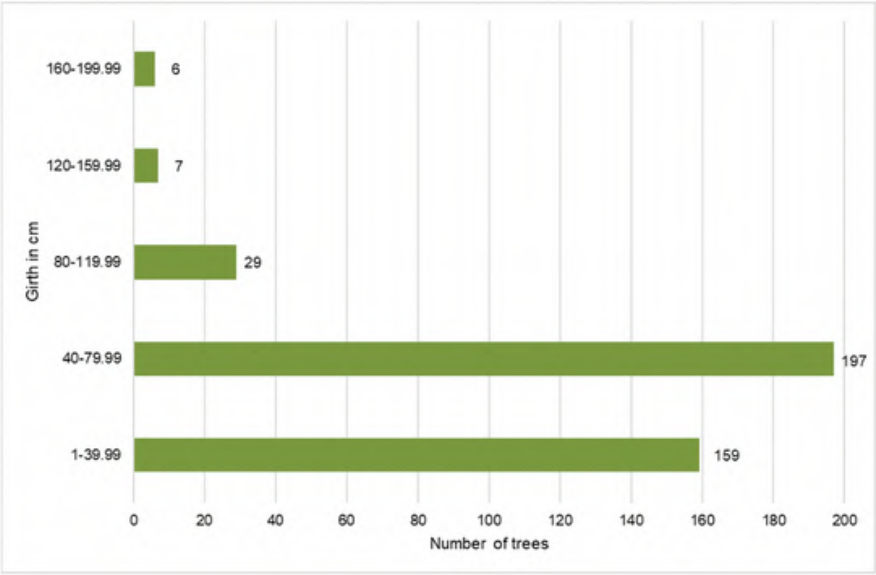
Species and number of trees for each species

Excluding the palms, of the 398 trees, the tallest is a rain tree at a height of 8.5 m. The tallest 10 trees comprised four yellow tabebuia, three rain trees, two trumpet trees and one white silk cotton.



Height of trees

Of the 398 trees, excluding the palms, the tree with the widest girth was a Sita-Ashok, with a girth of 190.5 cm. Most trees in Zone A of the campus are in the girth range of 40-80 cm. Of the 10 trees with the widest girth, six were Sita-Ashok and the rest were of silk floss.



Girth of trees

With the details of species, height and girth, we could calculate the amount of carbon sequestered by 398 trees–we did not include any of the species of palm numbering 38 in calculating the carbon. The carbon sequestered by the trees amounted to 11,826 kg or around 11.8 metric tonnes.

Total AGB (in kg)	Total BGB (in kg)	Total carbon (in kg)
20,121	4,829	11,826
Calculated using the formula pi*r2*h*wood density of species*taper value where girth to calculate r (radius) is measured in cm, h (height)is in m, wood density in g/cm3 and taper value is a constant 0.0673	BGB is calculated as anything between 24% and 37%; we have taken 24%. Martin AR, SC Thomas. 2011. A reassessment of carbon content in tropical trees. PloS One, 6(8): e23533. doi:10.1371/journal.pone.0023533	Carbon calculated at 47.4% of AGB + BGB Martin AR, SC Thomas. 2011. A reassessment of carbon content in tropical trees. PloS One, 6(8): e23533. doi:10.1371/journal.pone.0023533

AGB: Above Ground Biomass
BGB: Below Ground Biomass

The tree census is a work-in-progress and we will continue with the survey across the campus over the coming years.

We provide a snapshot of each of the species in Zone A in this report. We have included some interesting information about each of the species, a brief story or titbit, where the trees can be found on campus, and what you could look out for as a distinguishing feature. We have also highlighted medicinal uses or research being undertaken using parts of the tree to pique the curiosity. Who knows—we may contribute to research on potential environmental or medicinal uses?


African Tulip
Areca Palm
Betel Nut Palm
Bismarck Palm
Bottlebrush Bush
Copperpod
Curry-leaf
Date Palm
Fern Tree
Fishtail Palm
Guava
Gulmohar
Indian Beech
Indian Mast Tree
Jackfruit
Java Cassia
Madagascar Almond Tree
Rain Tree
Silk Floss
Sita-Ashoka
Tamarind
Traveller's Palm
Trumpet Tree
White Silk Cotton
Yellow Tabebuia
1b
1a
1c
1
3
5
2
4
P
Mysuru
10
10b
Ashoka
10a
Kaveri Sangama
0
0.02
0.05 kms


ZONE - A
N
W
E
S
6
7
11a
11c
11
11b
8
8b
8a
10c
Kaveri Poompuhar
Sabarmati
Map data © OpenStreetMap contributors, Microsoft, Facebook, Google, Esri Community Maps contributors, Map layer by Esri


ZONE - A
African Tulip
Areca Palm
Betel Nut Palm
Bismarck Palm
Bottlebrush Bush
Copperpod
Curry-leaf
Date Palm
Fern Tree
Fishtail Palm
Guava
Gulmohar
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Indian Mast Tree
Jackfruit
Java Cassia
Madagascar Almond Tree
Rain Tree
Silk Floss
Sita-Ashoka
Tamarind
Traveller's Palm
Trumpet Tree
White Silk Cotton
Yellow Tabebuia
N
W
E
S
1
1a
1b
1c
2
3
4
5
6
7
8
8a
8b
10
10a
10b
10c
11
11a
11b
11c
P
Mysuru
Kaveri Poompuhar
Ashoka
Sabarmati
Kaveri Sangama
0
0.02
0.05 kms
Map data © OpenStreetMap contributors, Microsoft, Facebook, Google, Esri Community Maps contributors, Map layer by Esri


African Tulip
(*Spathodea campanulata*)

African Tulip

(*Spathodea campanulata*)

Where in Zone A:

Parallel to the Mysuru building leading towards the mail room

What to look out for:

Tulip-shaped red flowers and feathery seeds

During the flowering season, the African tulip, with its reddish flowers and a yellow border, is quite eye-catching. The flowers have an interesting feature. The buds hold water and pressing the bud results in the water squirting out, giving the tree the name ucchekayi mara (pee tree) in Kannada. This is a fun activity that children love to indulge in. Birds, on the other hand, drink the water collected in the cup to quench their thirst.

You may have noticed the seeds strewn on the ground while walking out of the campus—with a brown centre surrounded by a transparent membrane. When the pointy pods explode these seeds are carried by the wind thus enabling dispersal. The pods themselves are long and brown, and we can creatively use them in art and craft.

In its native habitat in the western region of Africa the tree has many ethnobotanical, timber and medicinal uses. Although the tree is not native to India, people here also use the extracts from flowers, fruits, and stem for dyeing.

Research potential?

In traditional medicine in Ghana, people have used extracts from the leaf and especially the stem bark to treat ailments such as anaemia, fever, headache, stomach pain, and bleeding from wounds.


Areca Palm
(*Chrysalidocarpus lutescens*)

Areca Palm

(*Chrysalidocarpus lutescens*)

Where in Zone A:

In front of Sabarmati

What to look out for:

Golden yellow bark of the young tree that also gives it the name golden coloured palm

The areca palm is from the island of Madagascar which is a biodiversity hotspot. In its native region, the areca palm has medicinal and environmental uses, and people grow it as an ornamental plant both indoors and outdoors outside its native range.

Research potential?

Every plant has some use, perhaps a lot of it unexplored. In the case of areca palm research is being done to explore its use in bio-purification to reduce indoor pollution.


Betel Nut Palm
(*Areca catechu*)

Betel Nut Palm

(*Areca catechu*)

Where in Zone A:

In front of Sabarmati

What to look out for:

Large feathery leaves

The betel-chewing elderly grandparent is perhaps familiar to many of us. For others, it is the *supari* (hiring a paid assassin to kill someone) of Bollywood films that comes to mind. But it is not just the nut that is useful. People use the fibrous husk of the tree to make ropes, the wood in handicrafts, and leaf fibre to make lamp shades. The cut trunk of the areca can serve as a host body for vines and creepers. In Kerala, people fashion a hat out of the leaf, and those working outdoors in farms and fields commonly wear it.

Research potential?

Chewing nuts is known to destroy teeth and even cause oral cancer. Some research has shown that areca nuts possess antioxidant, anti-fungal, anti-allergic and a host of other beneficial properties. However, further studies must investigate the biochemical compounds that produce these beneficial effects to use them in modern medicine.


Bismarck Palm
(*Bismarckia nobilis*)

Bismarck Palm (*Bismarckia nobilis*)

Where in Zone A:

In front of Sabarmati

What to look out for:

Spiky large leaves

You can see the greyish-green, spiky, fan-shaped leaves of the palm, which can grow up to 3 m in height, in front of Sabarmati on campus. This palm is native to the island of Madagascar, and outside its native range is mostly planted as an ornamental species. The palm was named after the 19th-century German Chancellor Otto Von Bismarck, who played an important role in the unification of Germany.

Research potential?

Scientists conducted research in an urban residential area in Faisalabad, Pakistan, to assess the concentration of lead from vehicular pollution and the lead accumulation potential of ornamental species. The research found that the Bismarck palm accumulated lead the best, and the research recommended that the palm be planted in localities to mitigate the impacts of pollution, not just as an ornamental. This is interesting because people normally believe palms, especially non-native species, have little ecological use.


Bottlebrush
(*Melaleuca linearis*)

Bottlebrush (*Melaleuca linearis*)

Where in Zone A:

On the inner path next to Ashoka leading to Hampi

What to look out for:

Red flowers that look like bottlebrushes

Like other bottlebrush species, this species is native to New South Wales in Australia, and people plant it outside its natural habitat for decoration. The red flowers stick out looking just like the brushes used to clean bottles, hence the name. The fruit of this bottlebrush is also interesting as it looks like capsules fused to the branches.

Research potential?

One area of research for this genus is the potential of leaves as a source of essential oils.


Copperpod
(*Peltophorum pterocarpum*)

Copperpod (*Peltophorum pterocarpum*)

Where in Zone A:

Parking area opposite Sabarmati

What to look out for:

Pods are known as rusty shield bearers due to their shield-like shape.

The copperpod, native to East Asia and the Andaman, gets its name from the copperish coloured pods. The copperpod is planted as an ornamental in Bengaluru, and the canopy of yellow flowers when the tree is in bloom is a striking sight. The bright yellow flowers, which have a mild fragrance, resemble a golden carpet as they fall. The extracts from the bark have many uses in folk medicine. Additionally, a dye extracted from the bark of the tree is used in Java to colour batik (a dyeing technique using wax) yellow-brown; the colour is called sogan after the soga or the copperpod.

Research potential?

The flowers are not just fragrant and eye-catching—they also have medicinal uses. Research has shown that the extracts from the flowers have antimicrobial properties against seven human pathogens—*Staphylococcus aureus*, *Proteus mirabilis*, *Acinetobacter baumannii*, *Serratia marsecens, Bacillus cereus, Enterococcus faecalis* and *Streptococcus pyogenes*.


Curry-leaf
(***Bergera koenigii***)

Curry-leaf
(*Bergera koenigii*)

Where in Zone A:

Between Sabarmati and Sannati leading towards Oota

What to look out for:

Fruit berry that first looks pink, then turns purple and finally a shiny black

Johann Gerhard Koenig, a German botanist and physician who worked under the East India Company, gave the curry-leaf tree its name. In his writings, Koenig describes how South Indians roasted winged termites with garlic, sesame seeds, and curry leaves. Most south Indian dishes are incomplete without a tempering of curry leaves—be it the rasam a staple in most south Indian homes, or the prawn fry on special days. Ayurveda believes the leaves have medicinal properties, especially promoting digestive health. Moreover, people say that coconut oil with the leaves and fenugreek seeds is beneficial for hair growth. Do stop to take a whiff of the fragrant white flowers when the plant is flowering.

Research potential?

Multi-drug resistance due to the indiscriminate use of antibiotics in human healthcare, agriculture and veterinary medicine is of global concern today. Some research is being done to understand the potential of silver nanoparticles extracted from curry leaves for antibacterial purposes.


Date Palm
(*Phoenix sylvestris*)

Date Palm
(*Phoenix sylvestris*)

Where in Zone A:

In front of Sabarmati

What to look out for:

Long arching spiky leaves

People mainly value the date palm, native to India, for its sugary syrup that they can obtain by making an incision at the base of the leaf. When boiled, this sap condenses into blocks called patali gur while the syrup is what we know as nolen gur. Both are used to making sweets like sandesh and moa during the winters in Bengal. A tree can yield around 40 kg of jaggery in one season. You can also ferment the sap to make toddy. The seeds are edible after ripening. Date palm leaves are woven into floor mats, baskets, brooms, and fans, and people use its fruit and seeds in folk medicine.

Research potential?

One of the research papers had an interesting use of words in its title: “Green synthesis of silver nanoparticles by seed of Phoenix sylvestris L. and their role in the management of cosmetics embarrassment”. A cosmetic embarrassment? The research was looking at the potential of the date palm in treating, well, acne!


Fern Tree
(*Filicium decipiens*)

Fern Tree
(*Filicium decipiens*)

Where in Zone A:

Patch between Mysuru and Ashoka

What to look out for:

Leaves that look like ferns

The fern tree is native to India and countries in the eastern part of Africa. This is quite an attractive tree with its dark green leaves, and a thick clump of trees would look quite like an evergreen forest.

Research potential?

This tree is also called a Japanese fern tree, though its natural origins have no connection to Japan. The reason behind this name remains unclear, leaving an interesting mystery to solve!


Fishtail Palm
(*Caryota urens*)

Fishtail Palm (*Caryota urens*)

Where in Zone A:

In front of Sabarmati

What to look out for:

Leaves shaped like the tail-fin of a fish

The common name “fishtail” derives from the leaves—shaped like the tail-fin of a fish with jagged edges. Another very eye-catching feature is the flowers that hang like a thick bunch of plaits. The fishtail palm has many uses. Its flowers attract biodiversity such as bats, bees and birds for roosting and feeding on the fruits and seeds. Toddy and jaggery are made from the palm's sap. People also use the leaves in thatching, and they use the leaf fiber to make brooms and ropes. Cooking and eating the young unfolding leaf buds is also done. Traditional medicine uses literally every part of the palm, including leaves, bark, seed, flower, and root, to cure various ailments, such as toothache and jaundice.

Research potential?

Do fishtail palm fibres have potential use in brake pad development? Yes, the very same brake pads that are used to stop or slow down vehicles. Apparently, researchers are using the fibres to reinforce brake friction materials. Wonder what other uses the fibre could have?


Guava
(*Psidium guajava*)

Guava
(*Psidium guajava*)

Where in Zone A:

In front of Sabarmati

What to look out for:

Small shrub at this point, but sometime in the future–guavas!

An interesting feature of the guava is the peeling copperish bark that reveals a pale whitish stem that looks like a bone inside. The fruit needs no introduction—we have all eaten it at some point, whether the ones with pinkish or white flesh inside. The flowers of the guava are also quite pretty— white and slightly fragrant.

Guavas that become very ripe can be used to make a simple sweet dish. Remove the peel and seeds, and steam it for one whistle in the cooker. Make sugar syrup by boiling sugar in water and adding a small piece of cinnamon stick. Add the steamed guava to this syrup, and the sweet is ready.

Research potential?

The leaf extract of the guava is being tested for medicinal value as an antioxidants and for anti-cancer properties.

There is a Filipino folk tale about the guava, or *bayabas* as it is called in the local Tagalog language. The story goes like this. There was once a king called Barabas who ruled over a prosperous island. The king was overweight and always stuffing himself with food. One day, an old lady with a hunchback appeared and pleaded with the king for some food as she was starving. The king, irritated, asked her to go away. Furious, the old woman straightened herself, revealing a different form. She cursed the king, saying that nobody would love him and that people would forget him after he died.

Soon King Barabas fell ill and died—unloved and forgotten. People then noticed a strange plant growing from his grave, that bore a yellowish fruit which appeared to have a crown reminding them of the selfish king. Like the temperament of the king, the fruit also had a sour tinge. But the people developed a taste for the fruit, which they ate to stave off hunger and starvation. Since the tree had sprouted from the grave of the king they named it *barabas* after him, which over time became *bayabas*.

Guava
(*Psidium guajava*)


Gulmohar
(*Delonix regia*)

Gulmohar (*Delonix regia*)

Where in Zone A:

Behind Mysuru near the perimeter wall

What to look out for:

Long pods and the flame-red flowers; right now the two trees on campus are just shrubs

The gulmohar is also known as the flame tree as during the flowering season the tree looks like it is on fire owing to the bright red flowers. In addition to the flowers and the long pods an easy way of identifying the older trees is to look for buttress roots that rise above the ground giving the tree more support. In addition, the trunk where it branches has creases giving it the appearance of an elephant's skin or rumpled trousers. People have planted this species across the world as an ornamental, and it is native to Madagascar. And of course, various parts of the plant have been used traditionally in the treatment of diseases.

You can have much fun with the sepals of the flower; peel the reddish layer and stick them or the green part onto your fingernail, which gives you demon-like nails. You can paint the pods with pretty colours and designs, and then string the seeds inside tightly to make a necklace.

In Kerala, the gulmohar is called Kaalvarippoo which means the "Flower of Calvary". The Christian communities in Kerala associate the myth with the tree, believing that it stood near the cross where Jesus Christ was crucified on Mount Calvary. Christ's blood spread all over the flowers, giving them their deep red colour.

Research potential?

There is an increasing awareness of the harmful impact of dyes and their binding agents on the environment. Researchers are investigating whether the stem shell extract of the gulmohar can dye silk, and the initial findings are promising, but they need to conduct more studies.


Indian Beech
(*Pongamia pinnata*)

Indian Beech (*Pongamia pinnata*)

Where in Zone A:

Behind Mysuru near the perimeter fence; right now, this is a small shrub

What to look out for:

Flat woody pods with a pointed tip

Native to India, and large parts of Southeast Asia, the Indian beech is a tree with versatile uses. It is a drugstore, as the different parts of the tree have a range of medicinal uses. But perhaps one of the biggest potentials seen for the tree was the extraction of biofuel from the seeds. The oil extracted from the seeds can also be used to make lamp oil for lamps. The flowers are small and clustered together on a drooping stalk and are pale pink to lilac with a mild fragrance. It is a preferred tree for planting along roadsides because it grows fast, and the canopy provides good shade. It is also a drought and salinity resistant tree, hence quite hardy. Sometimes we can see grey patches on the mature leaves—this is from leaf mining worms that can disfigure a tree considerably.

Research potential?

More recent studies are looking at how the versatile tree can be used in phytoremediation, a process where plants convert pollutants into harmless byproducts. With Indian beech, the roots were shown to have a high capacity for colonisation of Arbuscular mycorrhizal fungi (AM) that form symbiotic relationship with plants. The presence of AM can increase tolerance of plants to abiotic stress, pathogens in roots and to contaminated soils.


Indian Mast Tree
(*Monoon longifolium*)

Indian Mast Tree (*Monoon longifolium*)

Where in Zone A:

At the entrance near Gate 1

What to look out for:

Leaves with wavy edges

The British are said to have named the Indian mast tree, and they used tree trunks extensively for ship masts.; but how true this is remains a mystery. It is also called the false Ashoka because of its resemblance to the Sita-Ashok (*Saraca indica*). Because people trim them, the trees we see usually appear conical; however, the untrimmed Indian mast can have a wide canopy. The flowers are small and white attracting bees, while the fruits are grape-shaped turning from green to yellow and a favourite food of bats.

Research potential?

Research is being undertaken on the potential of these trees to mitigate pollution as initial studies show they have a higher capacity to absorb metal when compared to other species. There is also research being done on the extraction of hydroxyapatite nanoparticles using leaves of the Indian mast in environmental management, mainly to remove fluoride from aqueous solution.


Jackfruit
(*Artocarpus heterophyllus*)

Jackfruit
(*Artocarpus heterophyllus*)

Where in Zone A:

Near Sabarmati

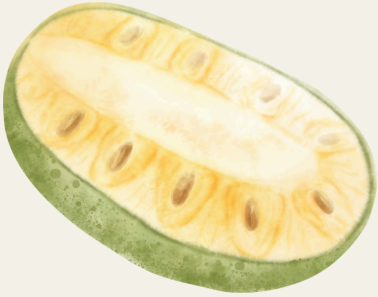
What to look out for:

Glossy leaves, but right now this is still a very young tree.

The jackfruit is an extremely versatile tree. The fruit we are all familiar with having relished them when ripe but the raw fruit is also seen as a substitute for meat owing to its shredded meat-like texture. The seeds can also be roasted and eaten. The wood possesses a unique tonal quality and is used to fashion the musical instrument veena; the ekantha veena is carved out of a single jackfruit tree. The green leaves can also very easily be fashioned into spoons to drink soup or gruel.

Research potential?

An infusion of the leaves has been effective in killing the larvae of the dengue causing mosquito species *Aedes aegypti.*




Java Cassia
(*Cassia javanica*)

Java Cassia
(*Cassia javanica*)

Where in Zone A:

Between Kaveri Sangama and Ashoka

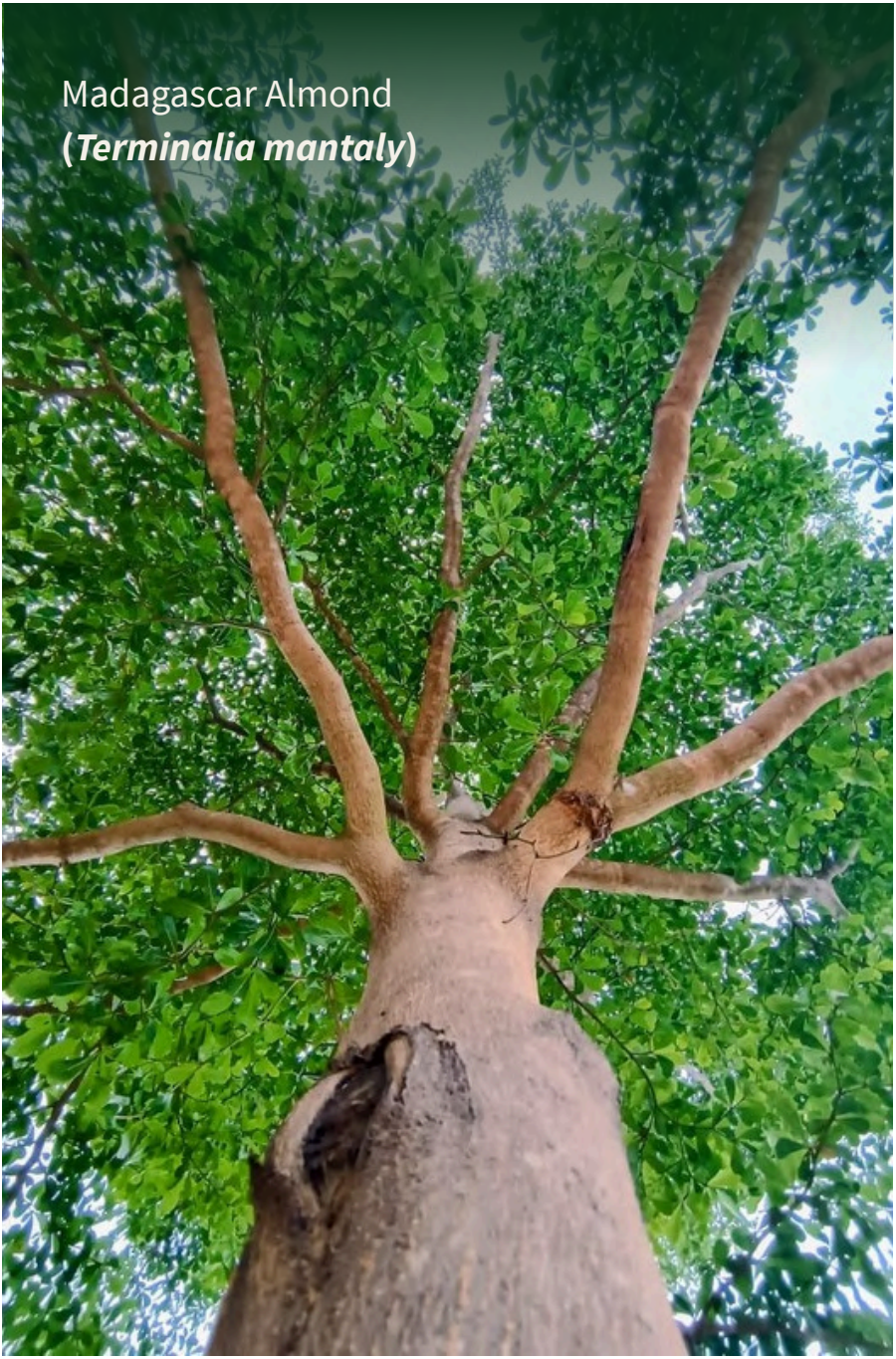
What to look out for:

Flowers arranged in bunches along the branch

The flowers of the Java cassia can take on different hues of pink, and when in bloom the flowers bunched together along the branches are a beautiful sight. The tree has medicinal uses and is a source of timber. In Thailand it is believed to be an auspicious tree that brings good luck. On campus, anyone who sits on the benches under these trees can also see them provide shade.

Research potential?

Extracts from flowers have shown to contain bioactive compounds that could lead to the development of new therapeutic drugs against human diseases.


Madagascar Almond
(*Terminalia mantaly*)

Madagascar Almond (*Terminalia mantaly*)

Where in Zone A:

Cycle parking near Gate 1

What to look out for:

Branches neatly arranged one above the other with tiny leaves

India and a few other countries introduced this exotic tree from Madagascar as an ornamental. It is easily identifiable from the branches that are in layers around the stem, one above the other. On campus this tree attracts some biodiversity—we have seen beehives and nests on the branches. People view the tree with suspicion elsewhere, although it has some medicinal uses in its native habitat. For example, in a local community in Kenya, residents are hesitant to plant the tree near their homes as they believe that the tree brings misfortune.

Research potential?

On campus, one of the Madagascar almond trees planted between Hampi and the seminar hall Gurudutt and Ray attracts the stunning atlas moth (*Attacus atlas*)—one of the largest of winged insects. Strangely, the moth lays its eggs on only one among the many trees that are found here. A real mystery indeed!


Rain Tree
(*Samanea saman*)

Rain Tree
(*Samanea saman*)

Where in Zone A:

In the parking area

What to look out for:

Leaves that droop and face sideways

The rain tree some say gets its name from the droplets of nectar that are dropped by sap-sucking insects in its native habitat which is Central America to Venezuela and Ecuador. The drooping of the leaves is due to the presence of a pulvinus, a thickening at the base that allows the leaf to move like a hinge during the night or on a cloudy day, giving it the Tamil name *thoongumoonji maram* (sleepy-face tree).

The rain tree is a versatile tree with its different parts used in folk medicine, and raw material such as resin and gum, fuelwood, building boats and furniture. Outside its native range, the rain tree is largely planted as an ornamental and shade-giving species. The canopy of a mature tree can extend to almost an acre providing a cooling shade on a hot summer day.

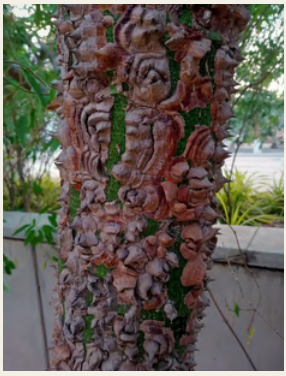
The rain tree is also a source of much fun and games for children. Children can collect the fruits in summer, and then they can grind the seeds into a pulp and shape it like balls. These balls can be used to play cricket and other sports. But watch out, as these rock-hard balls can hurt! The flowers that are pink and white look like powder puffs and are a favourite among children to play with.

Research potential?

One thing that needs more research is understanding the cooling potential of the tree in urban environments, when compared to other species.


Silk Floss
(*Ceiba speciosa*)

Silk Floss
(*Ceiba speciosa*)



Where in Zone A:

Amidst the white silk cotton, between Kaveri Poompuhar and Sabarmati extending almost to Oota

What to look out for:

Spiky thorns on the trunk and the striking pink flowers

The silk floss most eye-catching feature is its pink flowers. If you look at some of the trunks, you will see them covered with spiky, large thorns that indicate that the tree is young. Native to Central America, different parts of the tree possess medicinal properties. Unlike the white silk floss, the cottony floss of this species pods is not of a quality to be used as stuffing for pillows and mattresses.

Research potential?

Research done has indicated that the silk floss is a plastic and stress tolerant species that can adapt to polluted urban conditions underlining its use as a biomarker for environmental monitoring.

There is a fascinating story about the tree from its native region.

In an old Bolivian tale from the Guaraní people, a princess named Araverá, whose name means “Sparkle in the Sky,” was expecting a child from the hummingbird god. However, dark spirits called the Añas feared her child’s power and wanted to stop his birth. They chased her, riding horses that breathed fire.

To escape, Araverá used a magical flying seat given to her by her husband. She spent months fleeing from the spirits but eventually returned to Earth, where she sought safety inside the trunk of a toborochi tree (Guarani word for *Ceiba speciosa*). The tree’s sharp and pointy thorns kept the spirits away, allowing her to give birth safely.

Her son grew strong and eventually defeated the Añas. However, Araverá remained inside the tree for the rest of her life. According to legend, her spirit still lives within it. Each year, in autumn, she appears as the tree’s soft pink flowers. These flowers attract hummingbirds, strengthening the link between the tree and the legend. The blossoms of toborochi are also called the "flor de mayo" (May flower).


Sita-Ashok
(*Saraca asoca*)

Sita-Ashok

(*Saraca asoca*)

Where in Zone A:

At Gate 1

What to look out for:

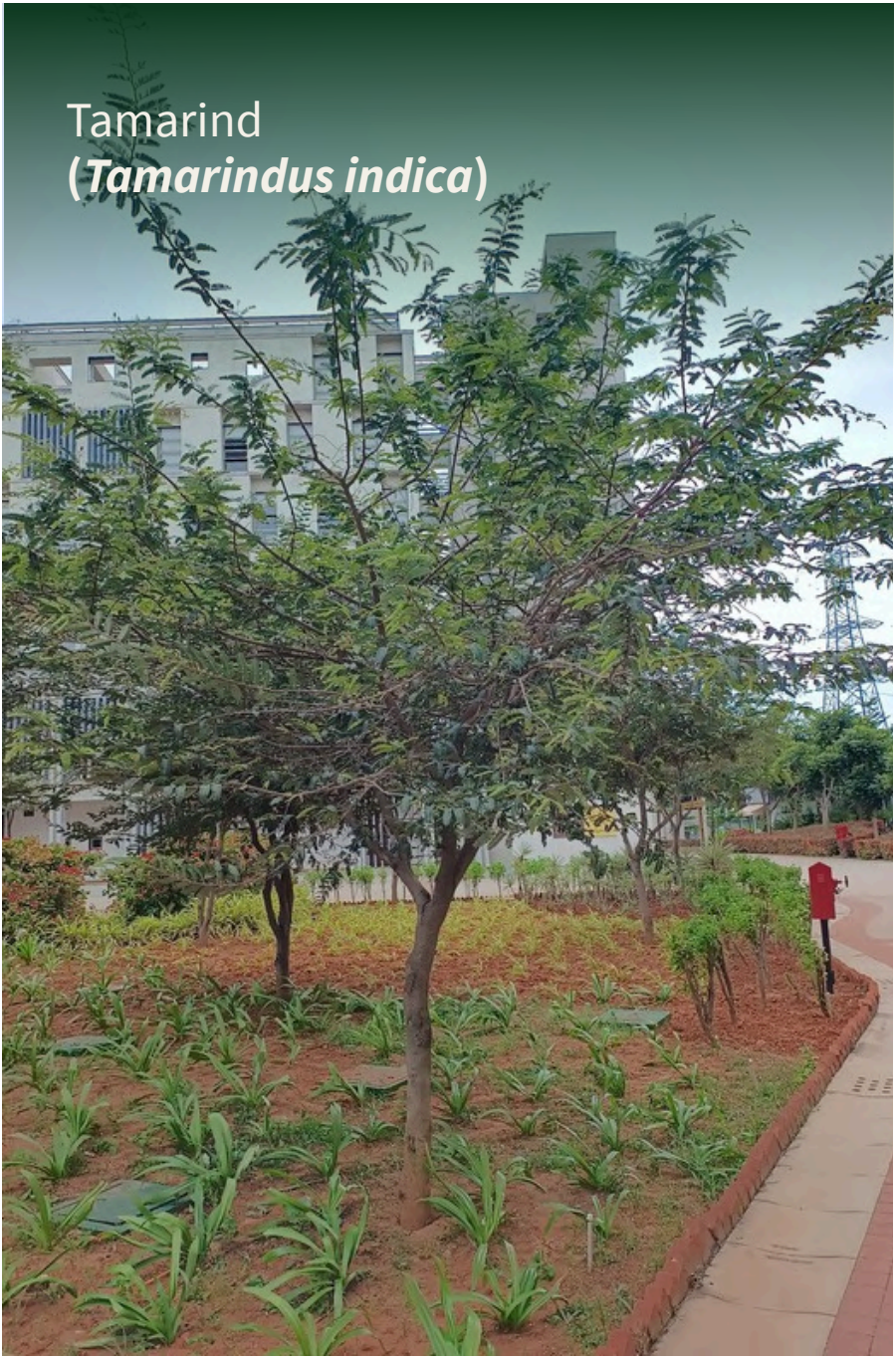
Clustered orange-red flowers with a faint fragrance

This tree, native to India, is often planted as an ornamental, but it has various uses. People use the wood to make furniture, and they use different parts of the tree in traditional medicine. A story explains why the tree is also known as the sorrowless tree.

It is said that there was once a demon named Sashoka. Once Sashoka met a sage, the first calm and peaceful human the demon had ever met. This made Sashoka want to change his violent ways. To attain this peace, the sage advised him to live a life through penance and prayer. Eventually, after Sashoka died, he was reborn as a tree in Lanka (present day Sri Lanka). The sage had assured him that one day, Hanuman would come and convey a message from Rama to Sita who was being held in captivity by Ravana, bringing Sita comfort and an ending to her sorrow. At that moment, his sins would vanish, and people would know him as Asoka, the tree that takes away grief. Therefore, people know the Ashoka tree, where Sita found refuge, as a sorrowless tree.

Research potential?

An interesting feature of the Sita-Ashok is the new leaves that are pink and droop down like tassels. These young leaves are a stark contrast to the dark green of the other leaves. Initially the leaves hang limp, but begin to stiffen as the leaves mature and also turn green. Why this happens is still a mystery. Another example of this phenomenon is the mango.


Tamarind
(*Tamarindus indica*)

Tamarind (*Tamarindus indica*)

Where in Zone A:

Triangular patch between Ashoka, Mysuru and Kaveri Poompuhar

What to look out for:

The profusion of creamish-yellow flowers with red veins during the flowering season

The tamarind's genus name could be "*indica*", but it didn't originate in India; it is from Western Africa. Every part of the tamarind has a use. The most familiar to us is of course the fruit pulp inside the seed pod used to make chutneys and curries. People can also eat the tender green leaves, and they can add them to dal. There are different stories about how the leaves of the tamarind came to be so tiny. One story is about Shiva's slaying of the demon Bhasmasura. Shiva who was out to destroy Bhasmasura, wounds the latter. Bhasmasura flees and hides behind a tamarind tree. Unable to find the demon, Shiva opens his third eye shattering the tamarind leaves exposing Bhasmasura who Shiva kills. Since then the tamarind leaves have remained small and delicate.

What many of us may not be aware of is how versatile the tamarind seed is. Mangaloreans roast and eat the seeds as a tasty snack after removing the outer covering. Folk performers of *koothu* in Tamil Nadu use seeds to make glue to paste leather onto drums. In Kumartouli, West Bengal, people use crushed seeds, mixed with colours, to make idols. People string seeds together to make necklaces and use them in traditional games like *pallanguzhi* and *uffangali* (seed-blowing game).

Research potential?

The leaves display interesting behaviour, but the reason why this happens still remains a mystery. The leaves of the tamarind (as do several other trees) close at night and open in the sunlight. This is known as nyctinasty. The bottom of the compound leaf of the tamarind has a tiny organ called the pulvinus. Water moves in and out of the pulvinus at sunrise and sunset and the change in pressure results in the leaf closing and opening. Although Alexander noticed this long ago, why the tree does this remains a mystery.

Uffangali—the seed blowing game

What you need: a pile of tamarind seeds, a smooth surface and some friends

How to play: Collect all the seeds into a pile, blow hard and scatter them. The seeds that are blown away from the pile need to be picked up by the player touching no other seed. Whoever picks the most seeds wins.


Traveller's Palm
(*Ravenala madagascariensis*)

Traveller's Palm (*Ravenala madagascariensis*)

Where in Zone A:

In front of Sabarmati

What to look out for:

Long leaf stalks 10 feet in length that spread out symmetrically from the trunk like a Chinese fan

In its native habitat in Madagascar, the palm is akin to the coconut in India—a Kalpavriksha, or wish-fulfilling tree—because of its many uses. The seeds are edible. Oil from the seed is used for cooking. Sugar can be extracted from the sap. Leaves are utilised in roofing and as packing material. Stem and bark also help in house construction. Young leaves and seeds have medicinal value and are used to treat many illnesses in folk medicine.

But outside its native range, the traveller's palm is planted merely as an ornamental.

Research potential?

The extract of the leaves in traditional medicine is used to treat diabetes. But more research needs to be done to see its efficacy.


Trumpet Tree
(*Tabebuia rosea*)

Trumpet Tree (*Tabebuia rosea*)

Where in Zone A:

Near Gate 1

What to look out for:

Papery pink flowers cover the leafless tree during the flowering season

This tree when it blooms in spring usually has no leaves giving the tree a striking appearance—a canopy of eye-catching pink. You can also see the winged seeds strewn on the ground near Gate 1. Research being done is also showing potential anti-inflammatory and antioxidant properties of the leaves of this species.

Research potential?

Flowers are not just pretty but they are also being researched for their larvicidal and antioxidant properties.


White Silk Cotton
(*Ceiba pentandra*)

White Silk Cotton (*Ceiba pentandra*)

Where in Zone A:

Amidst the silk floss, between Kaveri Poompuhar and Sabarmati extending almost to Oota

What to look out for:

Capsules/pods, and when they burst the floss with black seeds inside

The tree is native to Central and Southern America, but has been introduced into Africa, South and Southeast Asia where it has many uses. White silk cotton has whitish yellow flowers that bloom at night. An interesting feature is the bark—that is green when young and turns grey as the tree matures. As the tree matures, the once visible thorny protrusions on the bark also slowly disappear. Also, almost all parts of the tree have medicinal uses, and in Nigeria, people also eat the young leaves and shoots.

The fruit capsules resemble slender cucumbers, and inside the capsule are seeds surrounded by white floss. People traditionally used this floss and that of red silk cotton (*Bombax ceiba*) to stuff pillows and mattresses.. In summers in the past, cotton carders known as Dhunias, would arrive with their stringed instrument and vibrating bowstring—and this was a sign for the neighbourhood to take out their pillows and mattresses to be fluffed. Today the Dhunia has become a rare sight especially in our cities, and foam has replaced cotton — a not so sustainable material. And the Mayans of Central America referred to it as the World Tree as they believed that the tree connected the underworld, earth and heaven through its roots, trunk and branches.

Research potential?

The oil from the seeds is being explored as a potential source of biodiesel blending it with other oil seeds.


Yellow Tabebuia
(*Tabebuia aurea*)

Yellow Tabebuia (*Tabebuia aurea*)

Where in Zone A:

Between Ashoka and Kaveri Poompuhar

What to look out for:

Bright yellow trumpet-shaped flowers, and winged seeds that burst out of pods

The golden flowers in bloom of the yellow tabebuia can be quite eye-catching and give it the other name “Tree of gold”. It is an ornamental tree native to Central America. The leaves are a pretty sight too because they appear silvery-green owing to small scales.

Research potential?

The leaf extract has been used to make silver nanoparticles that can help remove different dyes from wastewater. Could this be a potential eco-friendly and low-cost method to support environmental cleanup?

Section 2

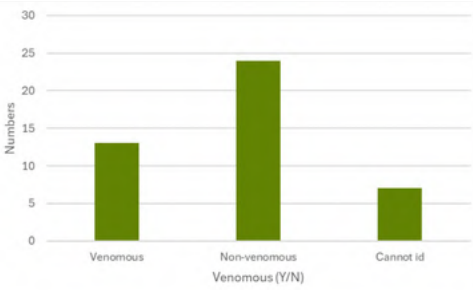
Snakes Spotted on Campus

Our university campus in Bengaluru is also a habitat for different species of snakes. Whenever someone spots a snake on pathways, adjacent to buildings, or places with regular presence of people, they carefully catch, bag, and release it safely into the scrub habitat outside the campus. The university had organised training in 2024 for our campus security and gardening staff. Trainer Gnaneswar Ch, from the Madras Crocodile Bank Trust/Centre for Herpetology in Chennai, led awareness sessions about venomous and non-venomous snakes, explained actions to take when spotting a snake, and covered the "Do's and Dont's" if someone was bitten by a snake. Few of the staff members learned how to handle and remove snakes, prioritising the safety of the people on campus and the snake.

Every time a member of the security or garden staff (or in some cases students and other members) spots a snake and removes it safely, they file a snake incident report detailing the time, location, details of who and where the snake was released along with pictures and videos.

We compiled the information on snakes in this section from the snake incident reports between 31st July 2023 and 13th February 2025.

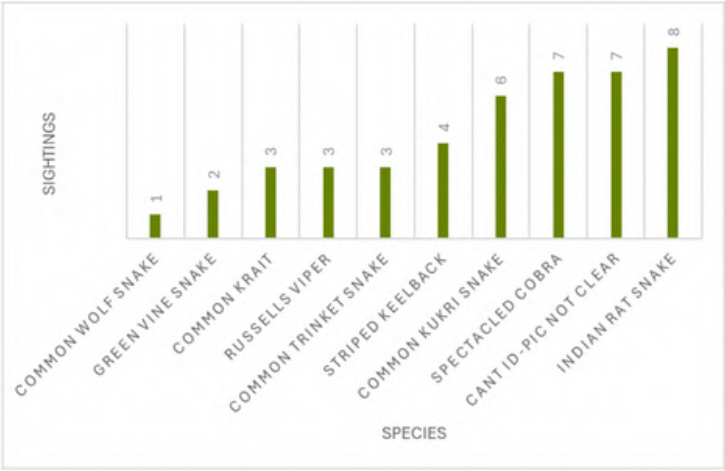
During this 20-month period 44 snakes were recorded of which we could identify 37 with surety (pictures and videos of the rest were unclear). These 37 snakes belonged to nine species and comprised both venomous and non-venomous species.



Number of venomous and non-venomous snakes spotted

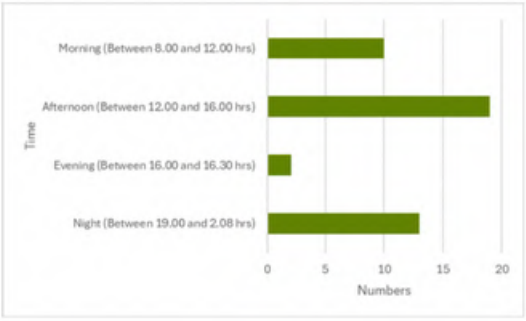
The three venomous species were the common krait (*Bungarus caeruleus*), Russells viper (*Daboia russelii*) and the spectacled cobra (*Naja naja*), while the non-venomous species numbering six comprised the common kukri snake (*Oligodon arnensis*), common trinket snake (*Coelognathus helena helena*), common wolf snake (*Lycodon aulicus*), green vine snake (*Ahaetulla dispar*), the Indian rat snake (*Ptyas mucosa*) and the striped keelback (*Amphiesma stolatum*).

The most number of sightings were of the non-venomous Indian rat snake followed by the spectacled cobra, a venomous species. Of the identified snake sightings there were more sightings of non-venomous numbering 24 than of venomous snakes numbering 13.



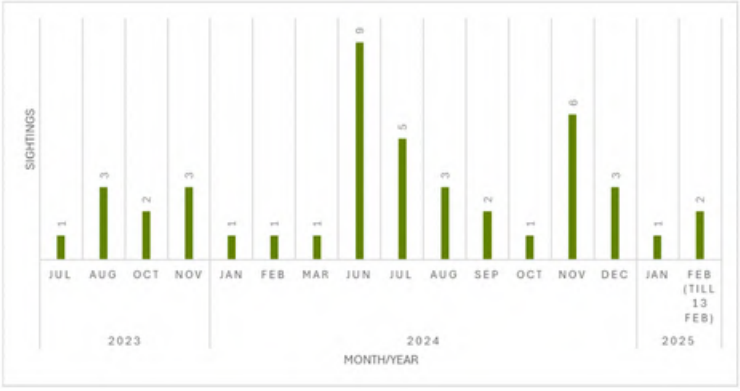
Species and numbers of snakes spotted

The highest frequency of sightings was between 12.00 and 4.00 pm and the maximum number of sightings was in June 2023.



Time during the day when snakes were sighted

Time	Numbers
Night (Between 19.00 and 2.08 hrs)	13
Evening (Between 16.00 and 16.30 hrs)	2
Afternoon (Between 12.00 and 16.00 hrs)	19
Morning (Between 8.00 and 12.00 hrs)	10



Month-wise number of snakes sighted

We give you a snapshot of the species that were identified with some interesting tidbits about each of the species:

Common name	*Scientific name*	About the snake
Common krait	*Bungarus caeruleus*	Glossy black. Grows to an average length of around 3 feet. Very active at night and has a potent venom and its bite can be fatal. One of the Big Four snakes for which antivenom serum is available.
Common kukri snake	*Oligodon arnensis*	Grows to an average length of 1 foot. Brownish with dark bands. Head has three clear inverted V-shaped dark bands. "Arnensis" the species name is from Arni a town in South Arcot, Tamil Nadu.
Common trinket snake	*Coelognathus helena helena*	Average length of 2.3 feet with a tan or olive body. Has two black stripes on the neck. Coils into S-shaped loops when disturbed.
Common wolf snake	*Lycodon aulicus*	Can grow to an average length of a foot or a little more. Its brownish-black color and bands often cause confusion with the venomous common krait.
Green vine snake	*Ahaetulla dispar*	The upper body is green. A very slender snake that can grow to an average length of 2.5 feet. Has a pointy snout. Likes to recline on branches. Mild venom has no effect on humans but can paralyse small prey. It is called "eye-pecking snake" or *kankothi pambu* in Tamil because reclining on a branch the closest movement it sees is the eye of a person.

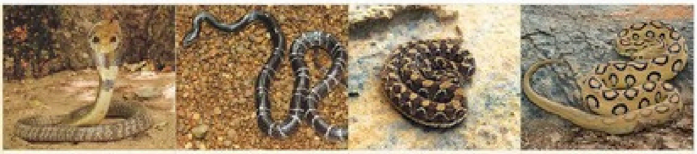
Common name	Scientific name	About the snake
Indian rat snake	*Ptyas mucosa*	Average length can reach upto 7 feet. Very fast, and completely harmless. Its pale yellow/olive colouring confuses people with the venomous spectacled cobra.
Russell's viper	*Daboia russelii*	Has a thick body with diamond-shaped patterns. Venomous; whose hissing sounds like a pressure cooker. Can grow to an average length of 3.5 feet. One of the Big Four snakes that can be treated with antivenom serum.
Spectacled cobra	*Naja naja*	Average length of 3.25 feet. Most distinguishing feature is the flared hood with "spectacled" markings. But not all may have the marking or there may be small variations. Venomous but mistaken for the harmless Indian rat snake. One of the Big Four's bite is treatable with antivenom serum.
Striped keelback	*Amphiesma stolatum*	Slender bodied snake, remarkably gentle. Grows to an average length of 1.4 feet.

Posters in English, Kannada, and Hindi about snake-related do's and don'ts also appeared across the Bengaluru campus.

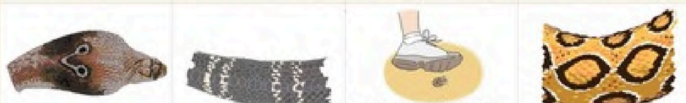
ನಮ್ಮ ಸುತ್ತಲಿನ ಸರ್ಪಗಳು ಮತ್ತು ನಮ್ಮ ಸುರಕ್ಷತೆ

Azim Premji University

ನಮ್ಮ ಸುತ್ತಲಿನ ಪ್ರಪಂಚದಲ್ಲಿ ನಾವು ಅನೇಕ ಹಾವುಗಳೊಂದಿಗೆ ಬದುಕುತ್ತಿದ್ದೇವೆ. ನಮ್ಮ ಸರೀಸೃಪ ಸ್ನೇಹಿತರಿಗೆ ನಾವು ಗೌರವತೋರುವುದರ ಜೊತೆಗೆ 'ವಿಷ ಚತುಷ್ಟಯ' ಗಳಿಂದ ದೂರವಿರುವುದು ಮುಖ್ಯವಾಗಿದೆ.



'ವಿಷ ಚತುಷ್ಟಯ'	ನಾಗರ ಹಾವು (ನಜ ನಜ)	ಸಾಮಾನ್ಯ ಕಟ್ಟು ಹಾವು (ಬಂಗಾರಸ್ ಕ್ಯೆರುಲಸ್)	ಗರಗಸ ಚಿಪ್ಪಿನ ವೈಪರ್ (ಎಕಿಸ್ ಕ್ಯಾರಿನಾಟಸ್)	ರಸ್ಸೆಲ್ ವೈಪರ್ (ಡಬೋಯಿಯಾ ರಸ್ಸೆಲಿ)



ವಿಶಿಷ್ಟ ಲಕ್ಷಣಗಳು	ತಲೆ (ಹೆಡೆ)ಯ ಮೇಲೆ ಗುರುತುಗಳು	ಹಿಂಭಾಗದಲ್ಲಿ ಎರಡು ಗೆರೆಗಳು	ಚಿಕ್ಕ ಗಾತ್ರವಾಗಿರುವುದರಿಂದ ತಪ್ಪಿಸಿಕೊಂಡು ಹೋಗುವ ಸಾಧ್ಯತೆ ಹೆಚ್ಚು	ಬೆನ್ನಿನ ಮೇಲೆ ವಜ್ರಾಕೃತಿಯ ವಿನ್ಯಾಸ

ವಿಷವಲ್ಲದ ಹಾವುಗಳು	ಇಲಿ ಹಾವು (ಪ್ಯಾಸ್ ಮ್ಯುಕೋಸಾ)	ತೋಳ ಹಾವು (ಲೈಕೋಡಾನ್ ಆಲಿಕಸ್)	ಸಾಮಾನ್ಯ ಕ್ಯಾಟ್ ಸ್ನೇಕ್ (ಬೋಯಿಗಾ ಟ್ರೈಗೋನಾಟಾ)	ಭಾರತೀಯ ಹೆಬ್ಬಾವು (ಪೈಥಾನ್ ಮೊಲರಸ್)

ಸರ್ಪಗಳೊಂದಿಗೆ ಸುರಕ್ಷತಾ ಕ್ರಮಗಳು

ಏನು ಮಾಡಬಹುದು?

- ಹಾವು ಪೀಡಿತ ಪ್ರದೇಶಗಳಿಗೆ ಹೋಗುವಾಗ ಪ್ಯಾಂಟ್ ಮತ್ತು ಮುಚ್ಚಿದ ಪಾದರಕ್ಷೆಗಳನ್ನು ಧರಿಸಿ.
- ನೀವು ಹಾವನ್ನು ಗುರುತಿಸಿದರೆ, ಗಾಬರಿಯಾಗಬೇಡಿ; ಶಾಂತವಾಗಿರಿ ಮತ್ತು ಹಾವಿನಿಂದ ಸುರಕ್ಷಿತ ಅಂತರವನ್ನು ಕಾಪಾಡಿಕೊಳ್ಳಿ.
- ಹಾವಿನ ಉಪಸ್ಥಿತಿಯ ಬಗ್ಗೆ ಇತರರಿಗೆ ಎಚ್ಚರಿಕೆ ನೀಡಿ.

ಏನು ಮಾಡಬಾರದು?

- ಯಾವುದೇ ಹಾವನ್ನು ಮುಟ್ಟಲು, ಹಿಡಿಯಲು ಅಥವಾ ನಿರ್ವಹಿಸಲು ಪ್ರಯತ್ನಿಸಬೇಡಿ.
- ಹಾವಿನ ಮೇಲೆ ಯಾವುದೇ ವಸ್ತುಗಳನ್ನು ಎಸೆಯಬೇಡಿ.
- ಹಾವನ್ನು ಮೂಲೆಗುಂಪು ಮಾಡಬೇಡಿ.

ಹಾವು ಕಚ್ಚಿದಾಗ ಏನು ಮಾಡಬೇಕು?

- ಶಾಂತವಾಗಿರಿ ಮತ್ತು ಹಾವಿನಿಂದ ದೂರ ಸರಿಯಿರಿ.
- ಕೈಗಡಿಯಾರಗಳು, ಆಭರಣಗಳು ಮತ್ತು ಬೆಲ್ಟ್‌ಗಳನ್ನು ತೆಗೆದುಹಾಕಿ ಮತ್ತು ಬಿಗಿಯಾದ ಬಟ್ಟೆಗಳನ್ನು ಸಡಿಲಗೊಳಿಸಿ.
- ಇತರರ ಸಹಾಯಕ್ಕಾಗಿ ಕಾಯುತ್ತಿರುವಾಗ, ಕಚ್ಚಿದ ಜಾಗವು ನಿಮ್ಮ ಹೃದಯದ ಮಟ್ಟದಲ್ಲಿ ಅಥವಾ ಅದಕ್ಕೂ ಕೆಳಗಿರುವಂತೆ ನಿಮ್ಮನ್ನು ಮರುಸ್ಥಾಪಿಸಿಕೊಳ್ಳಿ.
- ಕಚ್ಚಿದ ಜಾಗವನ್ನು ಕತ್ತರಿಸುವ ಮೂಲಕ ಅಥವಾ ವಿಷವನ್ನು ಹೀರಲು ಪ್ರಯತ್ನಿಸುವ ಮೂಲಕ ಗಾಯವನ್ನು ಹಾಳು ಮಾಡಬೇಡಿ.
- ಗಾಯದ ಬಳಿ ಏನನ್ನೂ ಬಿಗಿಯಾಗಿ ಕಟ್ಟಬೇಡಿ.
- ಪ್ರತಿವಿಷ (ಆಂಟಿ ವೆನಮ್) ದೊರೆಯುವ ಹತ್ತಿರದ ಆರೋಗ್ಯ ಕೇಂದ್ರಕ್ಕೆ ಹೋಗಿ.

ನೀವು ಹಾವನ್ನು ಕಂಡರೆ, ಈ ಭದ್ರತಾ ನಿಯಂತ್ರಣ ಸಂಖ್ಯೆ (24/7) ಗೆ ಕರೆ ಮಾಡಿ: 9606666800

ಛಾಯಾಚಿತ್ರ ಕೃಪೆ : ವಿವೇಕ್ ಶರ್ಮಾ ಮತ್ತು ಗಣೇಶ್ ರಾವ್

हमारे कैंपस में साँप – और इनसे सुरक्षित रहने के उपाय

Azim Premji University

हमारे कैंपस में कई साँप देखे गए हैं। हमारे इन रेंगने वाले दोस्तों का सम्मान करें और विशेष रूप से ज़हरीले 'बिग फोर' से दूरी बनाए रखें।

ज़हरीले "बिग फोर"

नाग ("नाजा नाजा")

करैत ("बंगारस सेरुलियस")

अफई ("एचिस कैरिनेटस")

दबोईया ("दबोइया रसेली")

विशिष्ट लक्षण

फन पर एक विशिष्ट निशान

पीठ पर दोहरी पट्टियाँ

छोटा आकार इसलिए आसानी से छूट जाता है

पीठ पर डायमंड पैटर्न

विषहीन साँप

धामन ("ट्यास म्यूकोसा")

वुल्फ साँप ("लाइकोडोन ऑलिकस")

कॉमन कैट साँप ("बोइगा ट्रिगोनाटा")

अजगर ("पायथन मोलुरस")

साँप से सुरक्षित रहने के लिए दिशानिर्देश

क्या करें:

- कैंपस में साँप-प्रवण क्षेत्रों में जाते समय फुल पैंट और बंद जूते पहनें।
- यदि आपको साँप दिखाई देता है, तो घबराएं नहीं; शांत रहें और साँप से सुरक्षित दूरी बनाए रखें।
- दूसरों को साँप की उपस्थिति के बारे में आगाह करें।

क्या न करें:

- किसी भी साँप को छूने, पकड़ने या हैंडल करने की कोशिश न करें।
- साँप पर कोई वस्तु न फेंकें।
- साँप को कोने में न धकेलें, उसे जगह दें और भागने का मौका दें।

सर्पदंश की स्थिति में

- शांत रहें और साँप से दूर चले जाएँ।
- अगर आप घड़ी, बेल्ट या गहने पहने हुए हैं तो उसे निकाल दें, और तंग कपड़ों को ढीला कर दें।
- मदद की प्रतीक्षा करते समय अपने आप को ऐसी स्थिति में रखें ताकि काटने का स्थान आपके दिल के स्तर पर या उससे नीचे हो।
- काटकर या जहर को चूसने की कोशिश करके घाव से छेड़छाड़ न करें।
- घाव के पास कोई भी चीज कसकर न बांधें।
- निकटतम स्वास्थ्य केंद्र पर जाएँ जहां विषरोधक दवा उपलब्ध हो।

यदि आपको साँप दिखाई दे, तो नीचे दिए गए सुरक्षा नियंत्रण नंबर (24/7) पर कॉल करें:
9606666800

फोटो क्रेडिट: विवेक कर्मा और गणेशन राव

Section 3

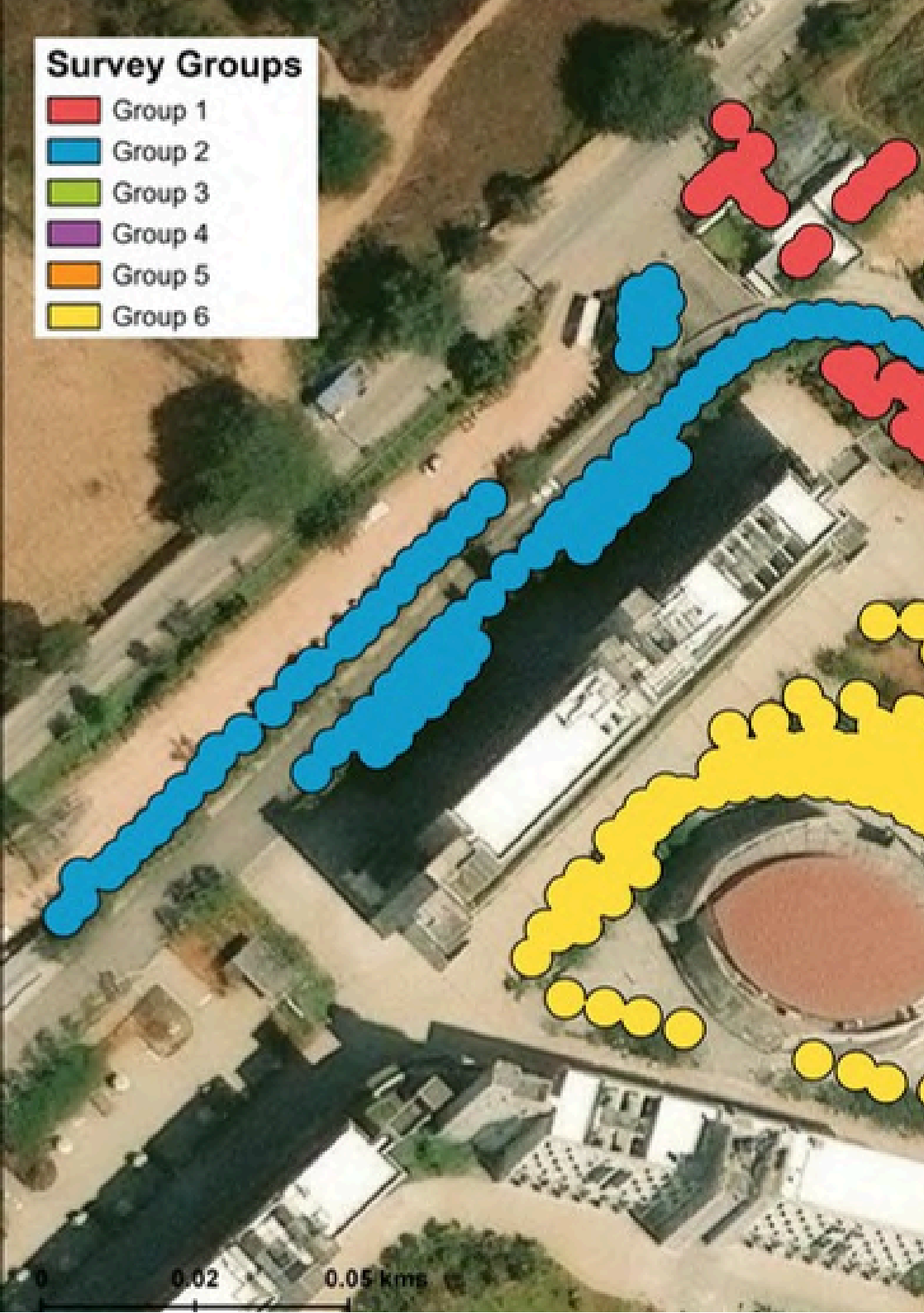
Campus BioBlitz

Plants | Insects | Birds | Spiders | Reptiles

A BioBlitz is where a group gets together and documents the biodiversity of an area in a specified period–usually 24 hours. The species can be trees, plants, fungi, birds, insects, shrubs, animals and so on. It is a fun way to document biodiversity, but at the same time working along with others who know about the species a BioBlitz provides an opportunity to learn about the floral and faunal life.

One course in the third semester of the BSc Environmental Science and Sustainability (ESS) titled “Ecology, Environment and Development” uses place-based pedagogy to teach students about interlinkages between nature and society, and also to foster a sense of place and stewardship for the campus. As part of this course, the BioBlitz is an exercise where the students are required to learn about biodiversity–not as a distant part–but around them in the space they are learning and living in during their undergraduate programme.

The 2023-27 batch of students, comprising 38 students, conducted a BioBlitz in seven groups on 12th, 15th-20th, and 23rd September, 2024. We allocated them seven patches in Zone A of the campus. They had to click photographs of the species they observed that included creepers, herbs, shrubs, plants, trees, insects, birds and so on, and use apps such as Google Lens and iNaturalist to identify species to the best possible extent. The groups were then required to enter the details of the species in an Excel sheet, including the common name and scientific name, any interesting observations, and upload photographs. We then collated the data and verified the species using iNaturalist and / or checking with experts. The details of this exercise are included in this section.


Survey Groups
Group 1
Group 2
Group 3
Group 4
Group 5
Group 6
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We hope that doing this exercise with future batches will serve multiple purposes:

1) Introduce students to how to do a BioBlitz and learn how they can use it in the future in the communities they live in
2) Plant the seed of stewardship for the campus by making them engage with nature on the campus more closely, especially biodiversity that often stays invisible to us
3) Generate some baseline information about the biodiversity on campus

Biodiversity type	Number of observations
Plants	145
Insects	61
Trees	41
Birds	9
Spiders	3
Mammals	2
Reptiles	2
Total	**263**

Campus BioBlitz

Plants

Plants

We could not verify 48 of the 145 plant observations because 11 lacked pictures, and we could not verify the other 37 even with photos. This report outlines the remaining 53 species, which account for 97 observations.

Several plants we observed on campus, whether planted or growing wild, have different uses in medicine, as food, as raw material, as well as many cultural and sacred associations.

Every plant can be a source of endless fascination if we choose to know more about it. For example, among the plants on campus, did you know that?

- Alkaloids extracted from the periwinkle have been beneficial in the treatment of cancer
- The petals of crape jasmine are used to make kajal
- Castor oil from castor seeds is a natural moisturizer
- Coconut oil infused with the flowers and leaves of the hibiscus, along with other ingredients, is good for hair growth
- The bright pink of the bougainvillea is not its flowers but is bracts or modified leaves

What's in a name?

Some of the plants have interesting common names….

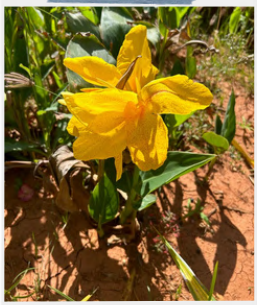
- Cats claw called as "hug-me-tight" in Hawaii gets its name from the claw-shaped thorns
- Century plant got its name because people believed it flowered only once in 100 years
- Common sow thistle is so named because it is a favourite of sows or pigs
- The crown of thorns worn by Jesus Christ at the time of his crucifixion possibly influenced crown of thorns; the stem of the plant has spiky thorns
- In Africa, people used Egyptian crowfoot grass as famine food. It gets its name because the seed head resembles the head of a crow.
- The river Ganges lent its name to the Ganges primrose, but the etymology or origin of the name remains unclear.
- Mother of Millions is a succulent that gets its name from its ability for mass reproduction. There is another succulent called Mother of Thousands, and the main difference is in the shape of the leaves, with the Mother of Thousands having wider leaves.
- The snake plant is so called because of the shape and sharp margins of its leaves. But it has a host of other interesting names—St Georges Sword as it is grown outside homes to ward off evil spirits; viper's bowstring hemp because the plant fibre is used to make bowstrings; mother-in-laws tongue possibly because of the sharp leaves as sharp as a mother-in-laws tongue!
- The plant is called Spider lily because its flowers resemble spiders.

Common name	Scientific name	Number of observations
Aquatic canna	*Canna glauca*	1
Ashanti blood	*Mussaenda erythrophylla*	1
Castor bean plant	*Ricinus communis*	1
Cat's claw	*Dolichandra unguis-cati*	1
Century plant (Agave)	*Agave sp.*	1
China rose (Hibiscus)	*Hibiscus rosa-sinensis*	1
Chinese wormwood	*Crossostephium chinense*	1
Citrus	*Citrus sp.*	2
Common lawn grass	*Cynodon dactylon*	2
Common sow thistle	*Sonchus oleraceus*	3
Congress grass	*Parthenium hysterophorus*	3
Copperleaf	*Acalypha wilkesiana*	4
Crape jasmine	*Tabernaemontana divaricata*	1
Creeping daisy (Wedelia)	*Sphagneticola trilobata*	4
Creeping wood sorrel	*Oxalis corniculata*	2
Crown of thorns	*Euphorbia milii*	3
Dragon plant	*Dracena sp.*	1
Egyptian crowfoot grass	*Dactyloctenium aegyptium*	1
False bird of paradise	*Heliconia sp.*	1
False eranthemum	*Pseuderanthemum sp.*	2
Feather-leaved cassia	*Chamaecrista mimosoides*	1
Fountain grass	*Pennisetum setaceum*	1
Ganges primrose	*Asystasia gangetica*	1

Common name	Scientific name	Number of observations
Golden dewdrop	*Duranta erecta*	1
Golden trumpet vine	*Allamanda cathartica*	1
Green amaranth	*Amaranthus viridis*	1
Indian shot	*Canna indica*	1
Indian spurge	*Euphorbia indica*	2
Ivy gourd	*Coccinia grandis*	1
Japanese honeysuckle	*Lonicera japonica*	1
Jessamines	*Cestrum sp.*	1
Lantana	*Lantana camara*	1
Lemongrass	*Cymbopogon citratus*	1
Mexican petunia	*Ruellia simplex*	1
Mother of millions	*Kalanchoe delagoensis*	1
Natal grass	*Melinis repens*	1
Obscure morning glory	*Ipomoea obscura*	5
Oleander	*Nerium oleander*	2
Paper flower (Bougainvillea)	*Bougainvillea spectabilis*	1
Periwinkle	*Catharanthus roseus*	1
Philodendron	*Philodendron sp.*	1
Purple sow thistle	*Emilia sonchifolia*	1
Rangoon creeper	*Combretum indicum*	1
Snake plant	*Dracaena trifasciata*	3
Spider lily	*Crinum asiaticum*	5
Spider plant	*Chlorophytum comosum*	6
Spurge	*Euphorbia sp.*	3

Common name	Scientific name	Number of observations
Swollen windmill grass	*Chloris barbata*	1
Touch-me-not	*Mimosa pudica*	6
Tridax daisy	*Tridax procumbens*	2
Tulsi	*Ocimum tenuiflorum*	3
Wild jasmine	*Volkameria inermis*	2
Windmill grass	*Chloris sp.*	1
	Total	**97**

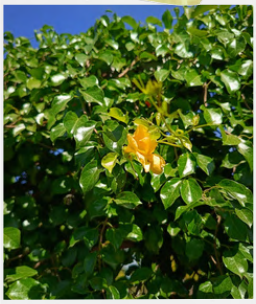
Ashanti blood
Kajal Kumari



Canna
Tanisha Dawane

Congress grass
Nandana Nallamuthu

Castor oil plant
Adrita Majumdar



Cats claw
Tanushree Bhandari

China rose
Adrita Majumdar

Chinese wormwood
Anay Kelkar

Common sow thistle
Kajal Kumari

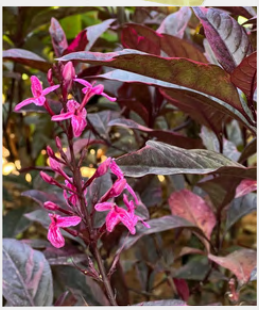
Copperleaf
Gayathri GS

Crape jasmine
Tanushree Bhandari

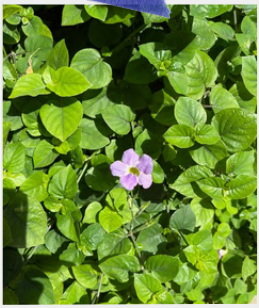
Crown of thorns
Arishal Singh

Dragon plant
Gayathri GS

Egyptial crowfoot grass
Adrita Majumdar



False eranthemum
Priyamvada Panwar



Ganges primrose
Ishaan Jain

Indian spurge
Spandanaa Gosu

Japanese honeysuckle
Ujjwal Nagar

Mexican petunia
Ishika Phillips

Mother of millions
Sundaram Kumar

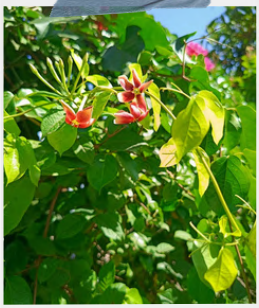
Obscure morning glory
Sujal Choudhury

Paper flower
Ujjwal Nagar

Periwinkle
Ishaan Jain

Philodendron
Spandanaa Gosu

Purple sow thistle
Sundaram Kumar



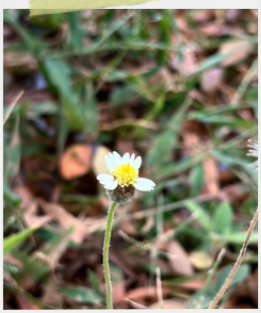
Rangoon creeper
Tanushree Bhandari

Spider plant
Swati

Spurge
Niyati Reddy

Swollen windmill grass
Ishan Kelkar

Touch-me-not
Niyati Reddy



Tridax daisy
Sujal Choudhury

Campus BioBlitz

Insects

Insects

Insects were the toughest of the species to identity! Of the 61 observations, 10 observations had pictures, but we could not identify these, and we have included them in the report as an interesting quiz to see if anyone can help identify them for us. Of the eight observations, the pictures were not very clear, and five observations did not have any pictures. With the help of iNaturalist and by checking with naturalists familiar with insects, identified the remaining 38 observations at the family, genus or species level, and common name.

The insects included different species of bees, wasps, flies, butterflies, grasshoppers and ants. Many of these we may have seen but ignored and often do not even know their names. For example, one of the most common insects that we have all seen, and would prefer to avoid, is the yellow and black flat millipede. It is quite harmless, though it secretes a cyanide substance when disturbed that can cause skin irritation. The cyanide it secretes in small quantities smells a little like almonds. Similarly, under leaves, on tree barks, and in the undergrowth, we can spot so many insects of different sizes, shapes and a range of colours from dull brown to metallic green. All we really need to do is look carefully.

Ant watching

Birdwatching is an activity many engage in, but ant watching can be equally fascinating. And watching ants also requires both looking up and looking down as ants can be arboreal or ground-dwelling species.

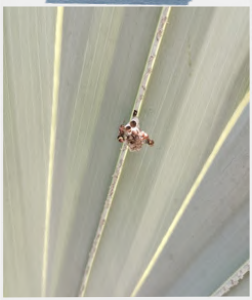
Students observed several ants—many of which were just too difficult to identify. The ones we could identify included the weaver ants and drop-tail ants. The weaver ants are orange-coloured and arboreal; i.e. they live on trees. Their nests comprise a bunch of leaves, which are woven together (hence the name weaver ants) by silk produced by the larvae. We can see weaver ants' nests on trees on our campus—just remember to look up! The droptail ants, on the other hand, build their nests at the base of trees or on open ground. While we could not identify the specific species, most likely *Myrmicaria brunnea*, the brown droptail ant, which is a common species found across India.

Common name	Scientific name	Number of observations
Ant	*Ant*	1
Bee	*Apis sp*	4
Blue blowfly	*Calliphera sp*	1
Brown spotted locust	*Cyrtacanthacris tatarica*	1
Caterpillar of Tussock moth	*Lymantriinae sp*	1
Cockroach	*Blattella sp*	2
Common castor	*Ariadne merione*	2
Common evening brown	*Melanitis leda leda*	1
Common nyctemera	*Nyctemera lacticinia*	1
Cricket	*Gryllus sp*	1
Damselfly	*Ischnura sp*	1
Droptail ant	*Myrmicaria sp*	1
Fly	*Chrysosoma sp*	3
Grass blue	*Psuedozizeeria maha ossa*	1
Grass yellow	*Terias sp*	1
Grasshopper	*Diabolocatantops sp*	1
Grasshopper	*Tylotropidius sp*	1
Great eggfly	*Hypolimnas bolina*	1
Larvae of spittlebug	*Superfamily Cercopoidea*	2
Mantis	*Mantis sp*	2

Common name	Scientific name	Number of observations
Mealybug	*Family Pseudococcidae*	1
Mud dauber wasp	*Chalybion sp*	2
Paper wasps	*Paper wasps*	1
Rock bee	*Apis dorsata*	1
Small paper wasp	*Ropalidia sp*	1
Weaver ants	*Oecophylla smaragdina*	2
Yellow and black flat millipede	*Harpaphe haydeniana*	1
	Total	**38**

Paper wasp

Ujjwal Nagar



Small paper wasp

Sivapriya S

Weaver ant nest

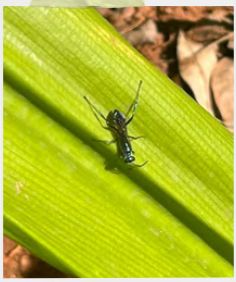
Adithya Surjith

Weaver ant

Adithya Surjith

Yellow & black flat millipede

Anushka Ahlawat



Mud dauber wasp

Tanisha Dawane

Blue blowfly

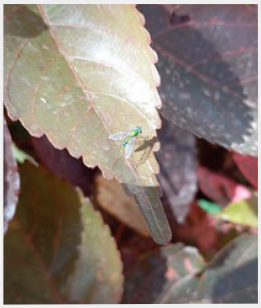
Shreeya Sivakumar

Brown spotted locust

Ishaan Jain

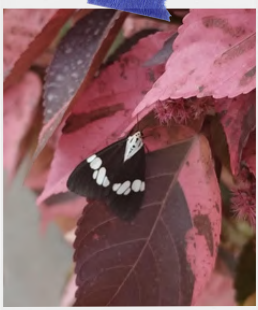
Caterpillar of tussock moth

Shreeya Sivakumar

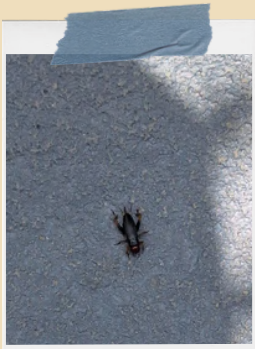


Chrysosoma sp
Nandana Nallamuthu

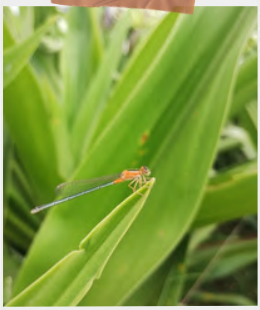
Common castor
Ishan Kelkar



Common nyctemera
Spandanaa Gosu



Cricket
Shreeya Sivakumar

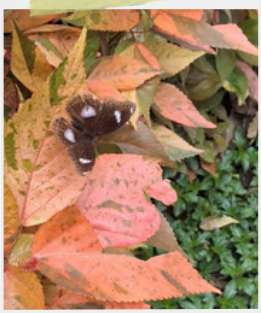


Damselfly
Sundaram Kumar

Grass yellow
Ishaan Jain

Grasshopper
Mrutyunjay Jadeja

Grasshopper
Tanisha Dawane



Great eggfly
Shreeya Sivakumar

Honey bee

Ishan Kelkar

Larvae of spittle bug

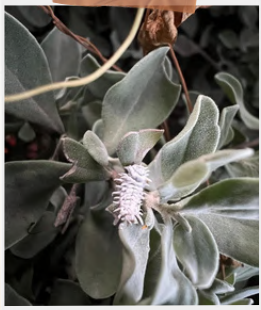
Ishaan Jain

Mantis

Anushka Ahlawat

Mantis

Mrutyunjay Jadeja

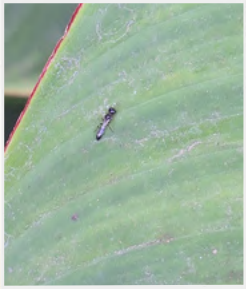


Mealybug

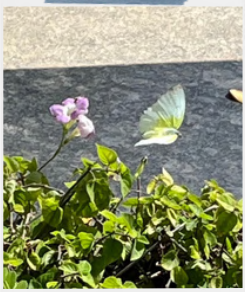
Priyamvada Panwar

Can you help identify these insects?

Write to us at info.sccs@apu.edu.in



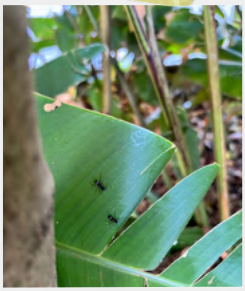
Shreeya Sivakumar



Ishaan Jain

Ishaan Jain

Yash Rathod



Sanjana Acharya

Nandana Nallamuthu

Ujjwal Nagar

Sanjana Acharya

Tanushree Bhandari

Campus BioBlitz

Birds

Birds

The recording included nine birds of seven species, and only three could be verified: the spotted dove, and the red-whiskered and red-vented bulbuls. The other species are mentioned here, but no photos were available for verification. However, these are common bird species seen on campus.

Common name	Scientific name	Number of observations	What do the birds on our campus look and sound like?*
Indian or oriental white-eye	*Zosterops palpebrosus*	2	Yellow bird, off-white belly, white "spectacles", "zwee" call
Ashy prinia	*Prinia socialis*	1	Black bill, pale cinnamon underparts, gray head, grayish-brown back, loud ringing song
Pale-billed flowerpecker	*Dicaeum erythrorhynhos*	1	Tiny, with curved bill, likes Singapore cherry berries, high pitched trilling call
Spotted dove	*Spilopelia chinensis*	2	White spots on nape of neck, brown overall with slightly rosy breast, coo sounds like "coo-a-roooo"
Red-whiskered bulbul	*Pycnonotus jocosus*	1	Crest on head, red patch on cheek, white tipped tail feathers, generally found in pairs, calls include high pitched pips and a "pik-pik-a-wew" sound
Red-vented bulbul	*Pycnonotus cafer*	1	Red colour under tail, short crest
Purple-rumped sunbird	*Leptocoma zeylonica*	1	Male and female look very different, male has green metallic crown, female is grayish brown with pale yellow underbelly, sharp beak to probe flowers for insects and nectar, call sounds like "tityou, tityou, trritt, tityou."

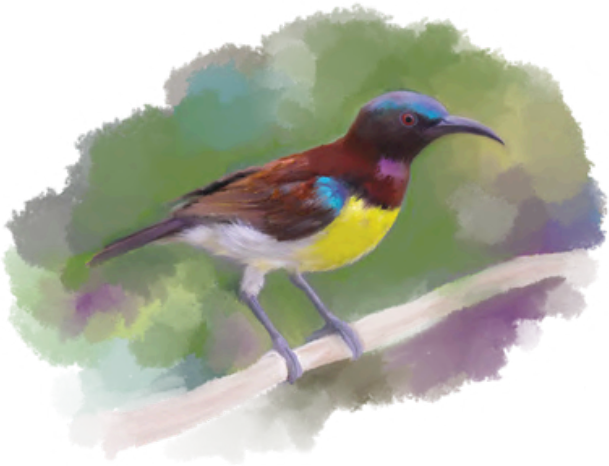
*If you want to listen to the call of the birds you can at https://ebird.org/explore. Just copy paste the species name in the "Explore species" that will take you to the page with details of the bird including a recording of its call.

Spotted dove

Parvi Khosla

Red-whiskered bulbul

Ishan Kelkar



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Spiders

Spiders

Three spiders were also documented–a two-striped jumping spider (*Telamonia dimidiata*), an orb-weaving species, possibly the signature spider (*Argiope sp.*) and another spider which was difficult to identify from the picture but most likely is a jumping spider from the family Salticidae.

Of what use is the two-striped jumping spider?

The adult two-striped jumping spider is quite small, around 10-11 mm. We may ask: what possible use could such a small creature have? Well, these spiders eat mosquitoes, moths and other insect pests thus acting as a bio-control agent. They are small, but quite mighty in their own way.

Two-striped jumping spider

Tanushree Bhandari

Signature spider

Tanisha Dawane

Mammals

Two mammals reported were species of bats, which again we could not verify as there were no pictures.

Campus BioBlitz

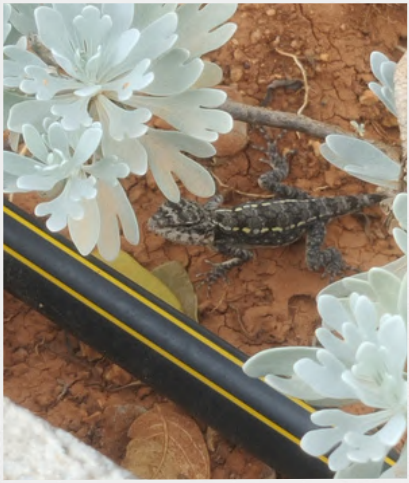
Reptiles

Reptiles

Among reptiles, one mentioned was a skink, but with no picture attached we could not verify the species. The other was an Indian rock agama *(Psammophilus dorsalis).*

The Indian rock agama as an urban dweller

The Indian rock agama has been the subject of research to understand how urbanisation has affected the lizards' diet, hunting modes, escape strategies from predators, mating behaviour and so on. For example, when it came to diet, it was discovered that urban lizards were heftier with a higher body mass than their rural counterparts as urban rock agamas were found to spend more time on the sit-and-wait strategy for hunting. The Indian rock agama seems to adapt to urbanisation without negative effects, but research is showing that it is important to preserve rocky patches and green cover to help them thrive.



Indian Rock Agama

Adrita Majumdar

Acknowledgements

We thank Vena Kapoor, an independent nature educator and ecologist, for her help with the identification of some of the insect species. Sharing planting and tree data allowed us to initiate the census, thanks to Victor Raj and the IMF team. We thank the security and garden staff, who are quick to report any snake sighting, ensure that a record of the same is maintained, and especially our security officer Vasudevan KV, who compiles the snake incident report and for sharing the same with us.

Notes

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