



# Woody Floral Diversity of College of Forestry, Sirsi Campus, Uttara Kannada, Karnataka, India

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**Abstract:** This study provides a comprehensive assessment of woody flora diversity within the College of Forestry (COF), Sirsi, located in the ecologically rich Western Ghats of Karnataka, India. The complete enumeration method was used across six transects within 5.3 ha area. A total of 203 woody species from 56 families were recorded, comprising 1,863 individuals. The family Fabaceae was the most dominant, with 28 species and 515 individuals followed by Poaceae with 14 species and 18 individuals. Among the different species distributed the most predominant species is *Saraca asoca* (212) followed by *Tectona grandis* (149) and *Millettia pinnata* (70). With respect to proportion of woody flora in different growth stage trees were more predominant (35.00%) followed by poles (30.00%), saplings (27.00%) and seedlings (8.0%). Higher Shannon-Weaver species diversity index (4.309) and Simpson index (0.9699) indicates that College of Forestry, Sirsi campus is endowed with rich plant diversity. The findings underscore the ecological importance of academic landscapes in conserving native and rare species. Rich flora equipped in the campus serves as a vital resource for researchers, students, and forest managers involved in urban ecosystem conservation.

**Keywords:** Woody flora, Western Ghats, Tree species diversity, Biodiversity conservation

Rapid urbanization in India is significantly reducing tree diversity, particularly in metropolitan areas, where habitat loss and the spread of non-native species are leading to ecological homogenization (Divakara et al., 2022). Urban expansion not only diminishes species richness but also alters the functional traits of remnant green spaces, further compromising biodiversity (Zheng and Yang 2023). This alarming trend highlights the urgent need for urban greening initiatives to mitigate biodiversity loss (Divakara et al., 2021, Pandey and Kumar 2018). Urban green spaces offer valuable opportunities for education and biodiversity enhancement, acting as learning hubs that foster environmental awareness. The taxonomic study of flora is very crucial to understand the richness of biodiversity. This goal can be achieved by carrying out floristic studies and it is the main pillar of assessing plant diversity conservation management and sustainable utilization (Jayanthi and Rajendran 2013). The survey of plants in a particular area helps in understanding the overall ecological conditions which can be deciphered by classifying the recorded plants into various biological life forms. Survey of plants and trees in a particular area gives us a profound understanding and appreciation of their medicinal and economic values. It provides the valuable information to the concerned authorities for formulation and implementing various strategies for the sustainable management and conservation of natural resources (Hanumantha et al., 2015, Poonia et al., 2020). Moreover, floristic investigations provide reliable information about the taxonomic classification, distribution,

ecology and uses of such plants and trees (Thakur et al., 2005). Floristic surveys help in explaining the plant biodiversity providing information regarding the current status, new invasion, revision of the flora, ecosystem function and its conservation in a particular geographical area (Sasidharan, 2004, Bhusara et al., 2016).

Presently academic institutions have emerged as key contributors to biodiversity conservation through sustainable landscaping and native species preservation. This could be one of the best *ex-situ* conservation approaches practiced in the country (Hanumantha et al., 2015). For instance, Acharya Prafulla Chandra College and the University of Sumatera Utara have demonstrated how campuses can support significant tree diversity and promote ecological stewardship (Biswas et al., 2023, Susilowati et al., 2021). The Institute for Social and Economic Change further illustrate how educational campuses can conserve rare, endangered plant species and contribute meaningfully to biodiversity goals (Nautiyal 2010). The Western Ghats of Karnataka, recognized as a global biodiversity hotspot, harbour a remarkable variety of rare, endemic, and endangered species within diverse ecosystems ranging from tropical evergreen forests to montane grasslands. Nestled in this ecologically rich region, the College of Forestry (COF), Sirsi, has a unique role in documenting and conserving local tree diversity. The campus, serving as a living repository for students and researchers, is also home to >50 accessions of *Coscinium fenestratum*, Schedule III plant, *Nothapodytes nimmoniana*, *Salacia chinensis*, *Cinnamomum verum*, etc

and a critically endangered liana (*Entada phaseoloides*). Understanding the current tree species composition is essential for tracking ecological changes over time and for developing effective strategies to maintain and enhance the ecological integrity of both the campus and the broader Western Ghats, thereby supporting the long-term preservation of this invaluable natural heritage. At present establishment of baseline for on-going biodiversity monitoring and contributing to conservation, sustainable management, research, education, aimed at training future forestry professionals is very essential. With this backdrop the present study was carried out to comprehensively to document and analyze the woody flora diversity, composition, and regeneration patterns, different habit types of plants and also dominant species with dominant families within the College of Forestry (COF) campus, Sirsi.

### MATERIAL AND METHODS

**Study area:** The present study was conducted within the campus of College of Forestry (COF), Sirsi, located in the Uttara Kannada district of Karnataka, India (14.61° N; 74.85°E), at an elevation of 611 meters above mean sea level. The region falls under the moist deciduous forest zone, with a mean annual temperature of 24°C and annual average rainfall ranges from 2500 mm to 3500 mm. Despite its compact size, the 5.70 ha area is recognized for its ecological richness, supporting a diverse range of flora and fauna, including several endemic and endangered species, making it an ideal site for woody component. To ensure systematic and complete enumeration of woody flora, the study area was divided into six well-defined transects (Hanumantha et al., 2015) viz. (1) Around the COF main building, (2) Nandini

Parlour to the Dairy unit, (3) Nandini Parlour to the COF vehicle stand, (4) Library to the Basketball court cross, (5) Around the Sapota plantation and (6) Basketball court cross to the Dairy unit. These transects spanned both natural and planted vegetation zones. The aerial map illustrates the layout of these transects (Fig. 1), ensuring spatial clarity in sampling and enabling comprehensive documentation of the woody flora diversity across the campus.

**Methodology:** To facilitate the accurate documentation of woody flora, the entire 5.69 ha campus area was divided into six pre-defined transects (T1 to T6) (Fig. 1). The heterogeneous distribution of vegetation and the presence of physical barriers such as buildings and pathways made stratified sampling impractical. Therefore, a complete enumeration method was adopted to ensure maximum precision in data collection. For species identification, regionally relevant and scientifically validated field guides were used.

**Data collection:** Systematic field survey was carried out across all six transects for tree species identification and documentation. Each transect was surveyed independently, and a checklist of woody plants was prepared based on field observations. For every species encountered, key details such as scientific name, common name, and family were recorded, along with the number of individuals across different growth stages/habits - seedlings, saplings, poles, and mature trees. After individual transect data collection, the findings from all six transects were compiled, and the consolidated dataset was subjected to statistical analysis.

**Diversity indices:** For calculating diversity indices of the study area data pertaining to species recorded and number of individuals within species were used. The Shannon-



Fig. 1. Aerial view of COF Campus with selected transects for complete enumeration

Weaver species diversity index (H'), Simpson's index (D), Margalef index of species richness; dominance and evenness were calculated using Past 4 software.

**RESULTS AND DISCUSSION**

During the study a total of 203 woody plant species belonging to 56 families were documented in different transects of the campus. Check list of these species with different growth stages is presented in Table 1. Among the several species, *Saraca asoca* (212), *Tectona grandis* (149), *Millettia pinnata* (70), *Caryota urens* (62), *Nothapodytes nimmoniana* (61), *Delonix regia* (52), *Artocarpus heterophyllus* (47), *Syzygium cumini* (44), *Cinnamomum verum* (38), *Santalum album* (36) were the top species abundantly distributed and exhibited strong representation across all stages. Considering the natural regeneration of species *Saraca asoca* (84) reported maximum followed by *Millettia pinnata* (30) and *Delonix regia* (10) was found

excellent. It could be due to regular seed-bearing nature of the species with good germination capacity of the seeds. Figure 2 illustrates the top 20 woody species reported based on total individuals across all growth stages.

Study showed that Fabaceae emerged as one of the dominant family, with 28 species and 515 individuals followed by Poaceae with 14 species and 18 individuals (Table 2). This pattern reflects the ecological adaptability and widespread prevalence of Fabaceae, a family known for its nitrogen-fixing capability and tolerance to diverse habitat conditions. Its dominance not only reflects its ecological role in enhancing soil fertility and supporting forest dynamics but also aligns with patterns observed in other urban and semi-urban flora studies across the Western Ghats. The prominence of Fabaceae highlights its key role in maintaining ecological balance and sustaining biodiversity in managed green spaces like institutional areas. With respect to percent share of each family (Fig. 3), again Fabaceae, emerged as

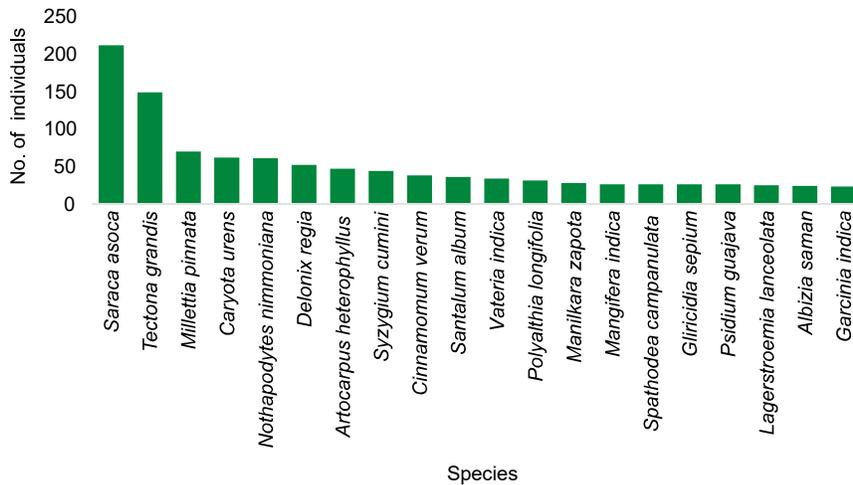


Fig. 2. Top 20 species with their abundance in the campus

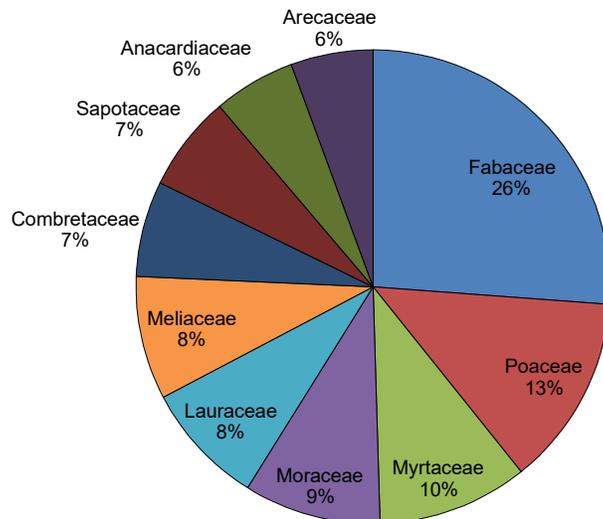


Fig. 3. Top 10 families contributing to total woody species diversity

**Table 1.** Woody flora diversity of COF Campus with their distribution in different growth stages/habits

Scientific name	Common name	Family	Trees	Poles	Saplings	Seedlings	Total
<i>Acacia auriculiformis</i> Benth.	Earleaf Acacia	Fabaceae	11	1	8		20
<i>Acacia catechu</i> (L.f.) Willd.	Khair	Fabaceae			1		1
<i>Acacia mangium</i> Willd.	Black Wattle	Fabaceae	2				2
<i>Actinorhysis calapparia</i> (Blume) H.Wendl. & Drude ex Scheff.	Ram Adike	Arecaceae			4		4
<i>Adenantha pavonina</i> L.	Red Bead Tree	Fabaceae	1	1	2		4
<i>Adina cordifolia</i> (Roxb.) Brandis	Yellow Teak	Rubiaceae	1	2			3
<i>Aegle marmelos</i> (L.) Correa	Bael	Rutaceae	1				1
<i>Ailanthus triphysa</i> (Dennst.) Alston	Maddi Dhoopa	Simaroubaceae	1				1
<i>Alangium salviifolium</i> (L.f.) Wangerin	Ankole Tree	Cornaceae	1	1			2
<i>Albizia lebeck</i> (L.)Benth.	Siris	Fabaceae	1	1			2
<i>Albizia saman</i> (Jacq.)Merr.	Rain Tree	Fabaceae	15	3	6		24
<i>Alstonia scholaris</i> (L.) R. Br.	Scholar Tree	Apocynaceae	4				4
<i>Anacardium occidentale</i> L.	Cashew	Anacardiaceae	8	3			11
<i>Annona muricata</i> L.	Lakshmanphal	Annonaceae		1	7		8
<i>Annona reticulata</i> L.	Ramphal	Annonaceae		1			1
<i>Annona squamosa</i> L.	Seetaphal	Annonaceae		1			1
<i>Anogeissus latifolia</i> (DC.) Wallich.ex Guill. & Perr.	Axlewood Tree	Combretaceae	2				2
<i>Antiaris toxicaria</i> Lesch.	Upas Tree	Moraceae	1				1
<i>Aporosa lindleyana</i> (Wight) Baill.	Salle	Phyllanthaceae		1			1
<i>Aquilaria agallocha</i> (Lour.) Roxb.	Agarwood	Thymelaeaceae			1		1
<i>Araucaria araucana</i> (Molina) K.Koch	Monkey Puzzle Tree	Araucariaceae	3	2	2		7
<i>Artocarpus heterophyllus</i> Lam.	Jackfruit	Moraceae	12	14	21		47
<i>Artocarpus hirsutus</i> Lam.	Wild Jack	Moraceae	3	6	5		14
<i>Artocarpus lakoocha</i> Roxb.	Monkey Jack	Moraceae	3	3	2		8
<i>Azadirachta indica</i> A. Juss.	Neem	Meliaceae		3			3
<i>Bambusa aspera</i> Schult. &Schult.f.	Rough Bamboo	Poaceae	1				1
<i>Bambusa balcooa</i> Roxb.	Balcoa Bamboo	Poaceae	2				2
<i>Bambusa bambos</i> (L.) Voss	Thorny Bamboo	Poaceae	1				1
<i>Bambusa nutans</i> Wall. exMunro	Nodding Bamboo	Poaceae	1				1
<i>Bambusa polymorpha</i> Munro	Burmese Bamboo	Poaceae	1				1
<i>Bambusa tulda</i> Roxb.	Bengal Bamboo	Poaceae	1				1
<i>Bambusa ventricosa</i> McClure	Buddha Bamboo	Poaceae	2				2
<i>Bambusa vulgaris</i> Schrad. ex J.C. Wendl.	Golden Bamboo	Poaceae	3				3
<i>Barringtonia acutangula</i> (L.) Gaertn.	Samudraphala	Lecythidaceae		4			4
<i>Bauhinia malabarica</i> Roxb.	Malabar Bauhinia	Fabaceae	1				1
<i>Bauhinia purpurea</i> L.	Purple Bauhinia	Fabaceae	5	8			13
<i>Beilschmiedia wightii</i> (Nees) Benth. ex Hook.fil.	Konkan Walnut	Lauraceae	1				1
<i>Bischofia javanica</i> Blume	Bishop Tree	Phyllanthaceae	1				1
<i>Bixa orellana</i> L.	Lipstick Tree	Bixaceae	1		4		5
<i>Bombax ceiba</i> L.	Red Silk Cotton Tree	Malvaceae	2				2
<i>Boswellia serrata</i> Roxb. ex Colebr.	Salai Guggul	Burseraceae				2	2
<i>Broussonetia papyrifera</i> (L.) Vent.	Paper Mulberry	Moraceae			2		2
<i>Butea monosperma</i> (Lam.)Taub.	Flame of the Forest	Fabaceae	4	2			6

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**Table 1.** Woody flora diversity of COF Campus with their distribution in different growth stages/habits

Scientific name	Common name	Family	Trees	Poles	Saplings	Seedlings	Total
<i>Caesalpinia bonduc</i> (L.)Roxb.	Fever Nut	Fabaceae			1		1
<i>Calliandra calothyrsus</i> Meisn.	Spiked Powder Puff	Fabaceae		1	1		2
<i>Calliandra haematocephala</i> Hassk.	Red Powder Puff	Fabaceae		3			3
<i>Callistemon citrinus</i> (Curtis) Skeels	Bottle Brush	Myrtaceae	2				2
<i>Calophyllum apetalum</i> Willd.	Bobbi	Calophyllaceae	1		1		2
<i>Calophyllum inophyllum</i> L.	Alexandrian Laurel	Calophyllaceae	1	2			3
<i>Cananga odorata</i> (Lam.) Hook.f. & Thomson	Ylang-Ylang	Annonaceae		2			2
<i>Canarium strictum</i> Roxb.	Black Dammar	Burseraceae	2	5			7
<i>Canthium dicoccum</i> (Gaertn.) Merr.	Ceylon Boxwood	Rubiaceae		1	1		2
<i>Careya arborea</i> Roxb.	Wild Guava	Lecythidaceae	2	1	4		7
<i>Carica papaya</i> L.	Papaya	Caricaceae		2			2
<i>Caryota urens</i> L.	Fishtail Palm	Arecaceae	12	8	41	1	62
<i>Cassia fistula</i> L.	Golden Shower Tree	Fabaceae	1				1
<i>Casuarina equisetifolia</i> L.	Beach She-Oak	Casuarinaceae	5	1			6
<i>Ceiba pentandra</i> (L.) Gaertn.	White Silk Cotton	Malvaceae		1			1
<i>Cerbera odollam</i> Gaertn.	Suicide Tree	Apocynaceae			1		1
<i>Chionanthus mala-elengi</i> (Dennst.) P.S.Green	Malabar Fringe Tree	Oleaceae		1			1
<i>Chrysophyllum cainito</i> L.	Star Apple	Sapotaceae			1		1
<i>Chrysophyllum roxburghii</i> G.Don	Hale Tree	Sapotaceae	1	1			2
<i>Chukrasia tabularis</i> A. Juss.	Indian Redwood	Meliaceae	3	3			6
<i>Cinnamomum camphora</i> (L.) J. Presl	Camphor Tree	Lauraceae	2				2
<i>Cinnamomum heyneanum</i> Nees	Cinnamon	Lauraceae		1			1
<i>Cinnamomum malabratum</i> (Burm.f.) J.Presl	Wild Cinnamon	Lauraceae	1				1
<i>Cinnamomum riparium</i> Gamble	Cinnamon	Lauraceae		1			1
<i>Cinnamomum tamala</i> (Buch.-Ham.) T.Nees&C.H.Eberm.	Indian Bay Leaf	Lauraceae		2			2
<i>Cinnamomum travancoricum</i> Gamble	Cinnamon	Lauraceae		1			1
<i>Cinnamomum verum</i> J.S. Presl	Cinnamon	Lauraceae	6	9	17	6	38
<i>Cocos nucifera</i> L.	Coconut	Arecaceae	21				21
<i>Cordia myxa</i> L.	Clammy Cherry	Boraginaceae	1				1
<i>Corypha umbraculifera</i> L.	Talipot Palm	Arecaceae		1			1
<i>Couroupita guianensis</i> Aubl.	Cannon Ball Tree	Lecythidaceae	9		2		11
<i>Dalbergia latifolia</i> Roxb.	Indian Rosewood	Fabaceae	6	4	4		14
<i>Delonix regia</i> (Hook.)Raf.	Gulmohar	Fabaceae	16	6	20	10	52
<i>Dendrocalamus brandisii</i> (Munro) Kurz	Velvet Leaf Bamboo	Poaceae	1				1
<i>Dendrocalamus stocksii</i> (Munro)	Marihal Bamboo	Poaceae	1				1
<i>Dendrocalamus strictus</i> (Roxb.) Nees	Solid Bamboo	Poaceae	1				1
<i>Dimocarpus longan</i> Lour.	Dragon's eyes	Sapindaceae	1				1
<i>Dinochloa compactiflora</i> (Kurz) McClure	Dinochloa	Poaceae	1				1
<i>Diospyros buxifolia</i> (Blume) Hiern	Box Leaf Persimmon	Ebenaceae			1		1
<i>Diospyros sylvatica</i> Roxb.	Forest Ebony	Ebenaceae		1			1
<i>Diospyros malabarica</i> (Desr.) Kostel.	Malabar Ebony	Ebenaceae		12			12
<i>Dipterocarpus bourdillonii</i> Brandis	Dhuma	Dipterocarpaceae	2				2
<i>Dipterocarpus indicus</i> Bedd.	Gurjun	Dipterocarpaceae	4	3			7

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**Table 1.** Woody flora diversity of COF Campus with their distribution in different growth stages/habits

Scientific name	Common name	Family	Trees	Poles	Saplings	Seedlings	Total
<i>Duabanga grandiflora</i> (Roxb.exDC.) Walp.	Daubanga	Lythraceae	1				1
<i>Dysoxylum binectariferum</i> (Roxb.) Hook.f. ex Bedd.	KempuDevadari	Meliaceae	3		10		13
<i>Dysoxylum malabaricum</i> Bedd. ex C. DC.	Bili Devadari	Meliaceae	3	6			9
<i>Elaeocarpus serratus</i> L.	Rudraksh	Elaeocarpaceae			3		3
<i>Emblica officinalis</i> Gaertn.	Indian Gooseberry	Phyllanthaceae	2	3	1		6
<i>Erythrina indica</i> Lam.	Indian Coral Tree	Fabaceae	1	5			6
<i>Eucalyptus globulus</i> Labill.	Tasmanian Blue Gum	Myrtaceae	4	2			6
<i>Eucalyptus tereticornis</i> Sm.	Blue Gum	Myrtaceae	6				6
<i>Ficus amplissima</i> Sm.	Bat Fig	Moraceae	1				1
<i>Ficus benghalensis</i> L.	Banyan	Moraceae	1				1
<i>Ficus elastica</i> Roxb. ex Hornem.	Indian Rubber Tree	Moraceae	2				2
<i>Ficus racemosa</i> L.	Cluster Fig	Moraceae	4	4	2		10
<i>Ficus religiosa</i> L.	Sacred Fig	Moraceae	1	1			2
<i>Flacourtia montana</i> J. Graham	Mullu Sampige	Salicaceae	2				2
<i>Garcinia gummi-gutta</i> (L.) N. Robson	Malabar Tamarind	Clusiaceae		7	8		15
<i>Garcinia indica</i> (Thouars) Choisy.	Kokum	Clusiaceae	5	17	1		23
<i>Garcinia morella</i> (Gaertn.) Desr.	Indian Gamboge	Clusiaceae		3	6		9
<i>Garcinia talbotii</i> Raizada	Talbot Garcinia	Clusiaceae		1			1
<i>Garcinia xanthochymus</i> Hook.f.	Mysore Gamboge	Clusiaceae		4	1		5
<i>Gliricidia sepium</i> (Jacq.)Walp.	Gliricidia	Fabaceae	17	8	1		26
<i>Gmelina arborea</i> Roxb. ex Sm.	White Teak	Verbenaceae	3	1	1		5
<i>Grevillea robusta</i> A. Cunn. ex R. Br.	Silver Oak	Proteaceae	5	5	1		11
<i>Grewia tiliifolia</i> Vahl	Dhaman	Tiliaceae	4				4
<i>Guadua angustifolia</i> Kunth	Guadua Bamboo	Poaceae	1				1
<i>Gymnacranthera canarica</i> (Bedd. ex King) Warb.	Ondanki Mara	Myristicaceae		1			1
<i>Hardwickia binata</i> Roxb.	Anjan	Fabaceae			2		2
<i>Holigarna arnottiana</i> Wall. ex Hook. f.	Black Varnish Tree	Anacardiaceae	1	2	2		5
<i>Holoptelea integrifolia</i> Planch.	Indian Elm	Ulmaceae	5				5
<i>Hydnocarpus pentandru</i> (Buch.-Ham.) Oken	Chaulmugra	Achariaceae		1	2		3
<i>Ixora brachiata</i> Roxb.	Western Ghats Ixora	Rubiaceae			1		1
<i>Knema attenuata</i> (Hook.f. & Thoms.) Warb.	Wild Nutmeg	Myristicaceae			8		8
<i>Kydia calycina</i> Roxb.	Kadubende	Malvaceae		2			2
<i>Lagerstroemia lanceolata</i> Wall.	Ben Teak	Lythraceae	13	5	7		25
<i>Lagerstroemia speciosa</i> (L.) Pers.	Pride of India	Lythraceae	17		1		18
<i>Lannea coromandelica</i> (Houtt.) Merr.	Indian Ash Tree	Anacardiaceae		2			2
<i>Lawsonia inermis</i> L.	Henna	Lythraceae	1				1
<i>Leucaena leucocephala</i> (Lam.)de Wit	Subabul	Fabaceae	1	1			2
<i>Lophopetalum wightianum</i> Arn.	Banaate	Celastraceae	1	2			3
<i>Macaranga peltata</i> (Roxb.) Müll.Arg.	Chandakala	Euphorbiaceae	1	1			2
<i>Madhuca bourdillonii</i> (Gamble) H.J.Lam	Dodda Hippe	Sapotaceae			1		1
<i>Madhuca longifolia</i> var. <i>latifolia</i> (Roxb.) A.Chev.	Indian Butter Tree	Sapotaceae	1				1
<i>Magnolia champaca</i> (L.) Baill. ex Pierre	Champak	Magnoliaceae	9	6	2		17
<i>Mallotus philippensis</i> (Lam.) Müll.Arg.	Kumkum Tree	Euphorbiaceae	3	4	3		10

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**Table 1.** Woody flora diversity of COF Campus with their distribution in different growth stages/habits

Scientific name	Common name	Family	Trees	Poles	Saplings	Seedlings	Total
<i>Mammea suriga</i> (Buch.-Ham. ex Roxb.) Kosterm.	Ceylon Ironwood	Calophyllaceae		3	3		6
<i>Mangifera indica</i> L.	Mango	Anacardiaceae	10	9	7		26
<i>Manilkara hexandra</i> (Roxb.) Dubard	Milk Tree	Sapotaceae	2				2
<i>Manilkara zapota</i> (L.) P.Royen	Chikoo	Sapotaceae	27		1		28
<i>Markhamia lutea</i> (Benth.) K.Schum.	Markhamia	Bignoniaceae	5		1		6
<i>Mastixia arborea</i> (Wight) C.B.Clarke	Kumbala Tree	Nyssaceae		1			1
<i>Melia dubia</i> Cav.	Malabar Neem	Meliaceae	10	3	3		16
<i>Mesua ferrea</i> L.	Nagasampige	Calophyllaceae	4	2	4	4	14
<i>Millettia pinnata</i> (L.)Panigrahi	Indian Beech Tree	Fabaceae	14	13	13	30	70
<i>Mimusops elengi</i> L.	Bulletwood Tree	Sapotaceae		3	1		4
<i>Mitragyna parvifolia</i> (Roxb.) Korth.	Kalam	Rubiaceae	6	2			8
<i>Morinda citrifolia</i> L., nom. cons.	Noni	Rubiaceae	4		2		6
<i>Moringa oleifera</i> Lam.	Drumstick	Moringaceae	1	4			5
<i>Muntingia calabura</i> L.	Singapore Cherry	Muntingiaceae	11	1			12
<i>Murraya koenigii</i> (L.) Spreng.	Curry Leaf	Rutaceae		2	2		4
<i>Myristica dactyloides</i> Gaertn.	Giddapatre	Myristicaceae	1		1		2
<i>Myristica fragrans</i> Houtt.	Nutmeg	Myristicaceae			3		3
<i>Myristica magnifica</i> Bedd.	Dodda Ramapatre	Myristicaceae		2			2
<i>Myristica malabarica</i> Lam.	Ramapatre	Myristicaceae	3	3			6
<i>Neolamarc kiacadamba</i> (Roxb.) Bosser	Kadamba	Rubiaceae	3		4		7
<i>Nothapodytes nimmoniana</i> (J. Grah.) Mabb	Durvaasane Mara	Icacinaceae	1	11	47	2	61
<i>Ochlandra rheedii</i> (Steud.) Benth. &Hook.f. ex Gamble	VaateBidiru	Poaceae	1				1
<i>Olea dioica</i> Roxb.	Rose Sandalwood	Oleaceae		1			1
<i>Oroxylum indicum</i> (L.) Kurz	Broken Bones Tree	Bignoniaceae	1	2			3
<i>Parkia biglandulosa</i> Wight &Arn.	Badminton Ball Tree	Fabaceae	3	2	2		7
<i>Peltophorum pterocarpum</i> (DC.)K.Heyne	Copperpod Tree	Fabaceae	3	1			4
<i>Perseam acrantha</i> (Nees) Kosterm.	Gulamavu	Lauraceae			1		1
<i>Pimenta dioica</i> (L.) Merr.	All Spice	Myrtaceae	1				1
<i>Pinanga dicksonii</i> (Roxb.) Blume	PandavaraAdike	Arecaceae			4		4
<i>Plumeria pudica</i> Jacq.	Wild Plumeria	Apocynaceae		1			1
<i>Polyalthia longifolia</i> (Sonn.) Thwaites	False Ashoka	Annonaceae	28	1	2		31
<i>Premna serratifolia</i> L.	Agnimanth	Lamiaceae		2			2
<i>Psidium guajava</i> L.	Guava	Myrtaceae	9	14	3		26
<i>Pterocarpus marsupium</i> Roxb.	Indian Kino	Fabaceae	5	5	1		11
<i>Pterocarpus santalinus</i> L.f.	Red Sanders	Fabaceae		3	13	1	17
<i>Roystonea regia</i> (Kunth) O.F.Cook	Royal Palm	Arecaceae	4				4
<i>Santalum album</i> L.	Sandal	Santalaceae	4	26	6		36
<i>Sapindus laurifolius</i> Vahl	Soapnut	Sapindaceae	7	7			14
<i>Saraca asoca</i> (Roxb.)Willd.	Sita Ashoka	Fabaceae	11	69	48	84	212
<i>Schleichera oleosa</i> (Lour.) Oken	Ceylon Oak	Sapindaceae			3		3
<i>Semecarpus kathalekanensis</i> Dasappa & M.H. Swaminath	DoddeleHolegeru	Anacardiaceae		1			1
<i>Senna siamea</i> (Lam.) H.S. Irwin & Barneby	Siamese Cassia	Fabaceae	2	4			6

Cont...

**Table 1.** Woody flora diversity of COF Campus with their distribution in different growth stages/habits

Scientific name	Common name	Family	Trees	Poles	Saplings	Seedlings	Total
<i>Senna spectabilis</i> (DC.)H.S.Irwin& Barneby	Spectacular Cassia	Fabaceae	1				1
<i>Shorea talura</i> Roxb.	Jaalari	Dipterocarpaceae			1		1
<i>Simarouba glauca</i> DC.	Paradise tree	Simaroubaceae	4	7	4		15
<i>Soymida febrifuga</i> (Roxb.) A. Juss.	Indian Redwood	Meliaceae			1		1
<i>Spathodea campanulata</i> P. Beauv.	African Tulip Tree	Bignoniaceae	19	4	1	2	26
<i>Spondias pinnata</i> (L. f.) Kurz	Wild Mango	Anacardiaceae		2			2
<i>Sterculia guttata</i> Roxb.	Spotted Sterculia	Sterculiaceae			1		1
<i>Swietenia macrophylla</i> G. King	American Mahogany	Meliaceae			2		2
<i>Swietenia mahagoni</i> (L.) Jacq.	Mahogany	Meliaceae	2	8	8		18
<i>Syzygium aromaticum</i> (L.) Merr. & L.M. Perry	Clove	Myrtaceae			2		2
<i>Syzygium caryophyllatum</i> (L.) Alston	South Indian Plum	Myrtaceae		1			1
<i>Syzygium cumini</i> (L.) Skeels	Black Plum	Myrtaceae	10	13	21		44
<i>Syzygium jambos</i> (L.) Alston	Malabar Plum	Myrtaceae	1	4	5		10
<i>Syzygium laetum</i> (Buch.-Ham.) Gandhi	Panneralu	Myrtaceae		3			3
<i>Syzygium travancoricum</i> Gamble	KempuNerale	Myrtaceae		1			1
<i>Tabebuia argentea</i> (Bureau &K.Schum.) Britton	Silver Trumpet Tree	Bignoniaceae		1			1
<i>Tabernaemontana heyneana</i> Wall.	Maddarasa	Apocynaceae	1				1
<i>Tamarindus indica</i> L.	Tamarind	Fabaceae	1	3	1		5
<i>Tectona grandis</i> L.f.	Teak	Lamiaceae	81	54	13	1	149
<i>Terminalia arjuna</i> (Roxb.) Wight &Arn.	Arjuna	Combretaceae	1	5			6
<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Bastard Myrobalan	Combretaceae	6	3	10		19
<i>Terminalia catappa</i> L.	Indian Almond	Combretaceae	2	1	1		4
<i>Terminalia mantaly</i> H. Perrier	Umbrella Tree	Combretaceae			1		1
<i>Terminalia paniculata</i> Roth	Kindal	Combretaceae	9	4	1		14
<i>Terminalia tomentosa</i> (Roxb. ex DC.) Wight &Arn.	Indian Laurel	Combretaceae	2				2
<i>Thuja orientalis</i> L.	Oriental Thuja	Cupressaceae		1			1
<i>Toona ciliata</i> M. Roem.	Red Cedar	Meliaceae	7	1	7		15
<i>Trema orientalis</i> (L.) Blume	Indian Charcoal Tree	Cannabaceae	4	4	4		12
<i>Vateria indica</i> L.	White Dammar	Dipterocarpaceae	8	9	17		34
<i>Vitex altissima</i> L.f.	Bharanagi	Lamiaceae	1	5			6
<i>Xylia xylocarpa</i> (Roxb.)Taub.	Burma Ironwood	Mimosaceae	1				1
<i>Ziziphus rugosa</i> Lam.	Wild Jujube	Rhamnaceae	1	1			2

the most species-rich family with 26 per cent to the total species diversity followed by Poaceae (13%), Myrtaceae (10%), Moraceae (9.0%), Lauraceae and Meliaceae (8.0%). This depiction confirms the dominance of certain plant families while offering insight into the broader taxonomic structure and floristic trends of the site. Photographs of important tree species found in campus of College of Forestry, Sirsi is shown in Plate 1.

Woody flora normally develops under four different growth stages viz., seedlings, saplings, poles, and mature trees. Among different individuals of all the species,

maximum number of individuals falls under the growth stage of trees (35%) followed by poles (30%), saplings (27%) and least was under seedlings (8%). Proportion of the woody flora under different growth stage is depicted in Figure 4. Study indicates that the natural regeneration of the species present in the campus is less except for few species; this may be due to the cleaning of campus continuously to avoid hindrance to students and also beautification of the campus; hence in order to increase the regeneration of rare and endangered species measures have to be initiated. Hanumantha et al. (2015) also reported 146 plant species belonging to 45

families' whereas Poonia et al. (2020) reported 93 tree species belonging to 93 genera and 47 families in same campus. Present study indicated that number of species and families were increased in the campus from 93 to 203 and 47 to 56 respectively during the span of 7-8 years.

**Diversity of woody species:** Species diversity is one of the most important measures of community structure and it has been related to various ecological factors. Shannon-Weaver's Species Diversity Index ( $H'$ ) of woody species in the study area is noted as  $H' = 4.309$ , whereas the Simpson's Diversity Index is 0.9699 (Table 3). Mousumi Garai et al. (2013) reported Shannon index value of tree species ranges from 2.435 to 2.788 and also recorded Simpson's Diversity Index ( $D$ ) of tree species ranges from 0.072 to 0.115 in three study sites of Durgapur Government college campus.

Neelamegam et al. (2016) reported lower Shannon index value (2.556) and with Simpson's Diversity Index index (0.124) at S.T. Hindu College campus, Kanyakumari, Tamil Nadu. Similar work carried out at GKVK campus, UAS, Bangalore by Sumanth and Prasanna (2022) reported lower

**Table 3.** Diversity indices for woody flora of the COF campus

Taxa (Species)	203
Individuals	1863
Dominance ( $D$ )	0.03005
Evenness ( $E$ )	0.3665
Shannon-Weaver species diversity index ( $H'$ )	4.309
Simpson index (1- $D$ )	0.9699
Margalef index of species richness	26.83

**Table 2.** Distribution of species and number of individuals in different families

Family	Number of species	Number of individuals	Family	Number of species	Number of individuals
Achariaceae	1	3	Lythraceae	4	45
Anacardiaceae	6	47	Magnoliaceae	1	17
Annonaceae	5	43	Malvaceae	3	5
Apocynaceae	4	7	Meliaceae	9	83
Araucariaceae	1	7	Mimosaceae	1	1
Arecaceae	6	96	Moraceae	10	88
Bignoniaceae	4	36	Moringaceae	1	5
Bixaceae	1	5	Muntingaceae	1	12
Boraginaceae	1	1	Myristicaceae	6	22
Burseraceae	2	9	Myrtaceae	11	102
Calophyllaceae	4	25	Nyssaceae	1	1
Cannabaceae	1	12	Oleaceae	2	2
Caricaceae	1	2	Phyllanthaceae	3	8
Casuarinaceae	1	6	Poaceae	14	18
Celastraceae	1	3	Proteaceae	1	11
Clusiaceae	5	53	Rhamnaceae	1	2
Combretaceae	7	48	Rubiaceae	6	27
Cornaceae	1	2	Rutaceae	2	5
Cupressaceae	1	1	Salicaceae	1	2
Dipterocarpaceae	4	44	Santalaceae	1	36
Ebenaceae	3	14	Sapindaceae	3	18
Elaeocarpaceae	1	3	Sapotaceae	7	39
Euphorbiaceae	2	12	Simaroubaceae	2	16
Fabaceae	28	515	Sterculiaceae	1	1
Icacinaceae	1	61	Thymelaeaceae	1	1
Lamiaceae	3	157	Tiliaceae	1	4
Lauraceae	9	48	Ulmaceae	1	5
Lecythidaceae	3	22	Verbenaceae	1	5



**Plate 1.** Photographs of important tree species distributed in College of Forestry, Sirsi

Shannon index value (3.53) and with Simpson's Diversity Index index (0.95). The higher diversity of the species in the COF campus indicates homogeneous distribution of species with rich diversity of species in the campus. The rich diversity could be due to higher rate of evolution and more diversified plant communities in the campus.

Morgalef index of species richness was 26.83 and

evenness index is 0.3665; indicating more diversity and unequal distribution of individuals in different species. Mousumi Garai et al. (2013) recorded Margalef's species richness index of tree species ranges from 3.795 to 4.991 in three study sites of Durgapur Government college campus. In the present study high diversity of species may be due favorable locality factors and complete protection of the

vegetation in the campus. Diversity of plant species is attributed by several factors such regeneration nature of the species, disturbances, anthropogenic factors and planting activities in an area. The saving and establishment of plant communities is an essential duty of human society for conservation and avail the immense benefits of biodiversity.

### CONCLUSION

The findings of this study clearly demonstrate that the campus of College of Forestry (COF), Sirsi, serves as a model for biodiversity conservation. The high species richness and abundance recorded within a relatively small area is notable and highlights the ecological integrity of the campus, which mirrors the broader biodiversity of the Western Ghats. The dominance of families like Fabaceae, known for ecological functions such as nitrogen fixation, and the strong presence of native and regenerating species suggest that the campus provides suitable microhabitats and environmental conditions for woody flora to thrive. This study reinforces the role of educational institutions as biodiversity hotspots and conservation hubs, capable of supporting rare and endangered species. It underscores the potential of academic campuses to function as living repository for environmental education, biodiversity research, and ecological restoration. By establishing a detailed baseline, the study enables future ecological monitoring and provides a framework for integrating biodiversity conservation into urban and semi-urban land-use planning. The results advocate for replicating such initiatives across other institutions to combat the biodiversity loss driven by rapid urbanization. The present study would be helpful to derive conservation policies and make sustainable use of plant resources of campus.

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