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Cover: Tiger Centipede *Scolopendra hardwickei*, Peacock Tarantula *Poecilotheria metallica*, Alexander Beetle *Megadromus antarcticus*, Greater-banded Hornet *Vespa tropica*—medium used colour pencil. © Aaron Fernandes.

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ARTICLE

Plant taxonomic diversity of Barunei Hill, Eastern Ghats, India

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Abstract: The present study on Barunei Hill documented 149 plant species. Out of 149, native species and non-native species are 125 and 24, respectively. Native species account for 4.58% of the 2,727 species recorded in the flora of Odisha. Native species belong to 112 genera and 50 families at the same time non-native species represent 23 genera and 15 families. Of the 125 native species, 43 are trees, 37 herbs, 29 shrubs, and 16 lianas/twiners/climbers. The 10 most speciose native families are Fabaceae (11), Malvaceae (11), Acanthaceae (11), Rubiaceae (7), Euphorbiaceae (6), Rutaceae (6), Apocynaceae (5), Cyperaceae (4), Lamiaceae (4), and Poaceae (3). According to the IUCN Red List status, the herb *Eriocaulon sharmae* R.Ansari & N.P.Balak. is 'Critically Endangered'. This taxonomic diversity study provides baseline information for sustainable ecosystem management and conservation in tropical and subtropical forest ecosystems.

Keywords: Bio-prospecting, conservation, dominant families, ecosystem, environment, green buffer, IUCN Red List status, plant communities, voucher specimen, World Flora Online.

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Author contributions: SB wrote the manuscript and collected the research data. SSH helped in the identification of plant specimens. AB conceived in the analysis of data.

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INTRODUCTION

Plants play a crucial role in maintaining ecosystems and supporting human life, yet many species face a significant risk of extinction (Raven 2021). Fisher & Humphreys (2024) reported that among 170 plant species listed as Extinct (EX) or Extinct in the Wild (EW) under various versions of the Red List, the most frequently cited evidence for extinction was the species being missing for a long period. Less than half of these species accounts included details about search efforts, and around 15% of the EX/EW listings did not explain why the species were classified as Extinct or Extinct in the Wild. Species that have been newly identified or remain undescribed appear to be even more vulnerable, while around 75% of undescribed species are considered at risk (Brown et al. 2023). A thorough analysis conducted by Humphreys et al. (2019) estimated that roughly 600 plant species have vanished since Linnaeus's time. A more recent study by Christenhusz & Govaerts (2025) suggests that the number is even higher, approximating 850 species, excluding those extinct in the wild (Rinandio et al. 2025).

Barunei Hill is located in Khordha District, Odisha, which features a tropical climate and is traditionally covered with lush forest dominated by spiny shrubs and lianas. Due to the harsh environmental conditions, the Barunei Hill features a handful of resilient plant species that have adapted to thrive in dry, nutrient-poor soil. These hardy species often exhibit specialized adaptations, such as deep root systems that allow access to deep soil moisture at greater depths and mechanism for water retention that enable survival during prolonged periods of dry season. As a result, the ecosystem in this area serves as a testament to the incredible resilience of plant species.

Alpha diversity is defined as species richness and species evenness within a community (Whittaker 1960, 1972). High alpha diversity reflects greater species diversity within a community and can contribute to ecosystem resilience against natural and anthropogenic disturbances. Studying alpha diversity is crucial under growing anthropogenic pressures such as the extraction of forest resources for food, fuel, household products, and traditional medicine.

Several studies (Panda et al. 2020; Bhadra et al. 2020; Das et al. 2022; Behera & Bhadra 2024) have been conducted on the forests of Odisha focusing on taxonomic diversity, and conservation. Pattanayak et al. (2025) conducted a review of plant diversity, natural resources and conservation strategies on the biodiversity heritage site of Gandhamardan Hill in western Odisha. Reddy et al. (2007) documented phytosociological aspects of Similipal Biosphere Reserve. Sahu et al. (2018) investigated its phytogeographical affinities, and Saranya et al. (2023) assessed anthropogenic disturbances and their implications for conservation and restoration. In the case of Barunei Hill, taxonomic diversity has not been studied till date. Therefore, the present study is contemplated to provide information on plant species status and Red List categories.

MATERIAL AND METHODS

Study area

Barunei Hill, a majestic natural landmark in the Khordha District of Odisha, India, lies between 20.154°–20.168° N and 85.620°–85.661° E. The hill is approximately 5 km long and 1.5 km wide, with an elevation range of 80–300 m, offering a panoramic view of the surrounding landscape (Image 1). Located about 32 km southwestern side of Bhubaneswar City Center, Barunei Hill is renowned for its breathtaking beauty and rich ecological and historical significance. The region experiences an annual rainfall of 1,200–1,400 mm, contributing to its lush greenery and diverse flora. A comprehensive vegetation survey has been conducted on the hill encompassing 16 field explorations (Image 2).

Field sampling

The field survey was conducted during June 2024–May 2025. Extensive field studies were conducted to assess the floristic composition of the study area (Images 1 & 2). Collection of plant specimens and their field photographs were taken to facilitate observation of the data and identification. The identified specimens were processed, pressed, dried, mounted and preserved as herbarium voucher specimens. Herbarium sheets are deposited in the Department of Botany, Centurion University of Technology and Management, Bhubaneswar, Odisha.

Data analysis

The plant species of Barunei Hill were identified following the standard taxonomic procedures outlined in the Flora of Odisha by Saxena & Brahmam (1996). To ensure accuracy and scientific rigour, the collected specimens were thoroughly examined and compared with reference samples in the Herbarium of Odisha Biodiversity Board (OBB) and CSIR-Institute of Minerals and Materials Technology (CSIR-IMMT), Bhubaneswar.

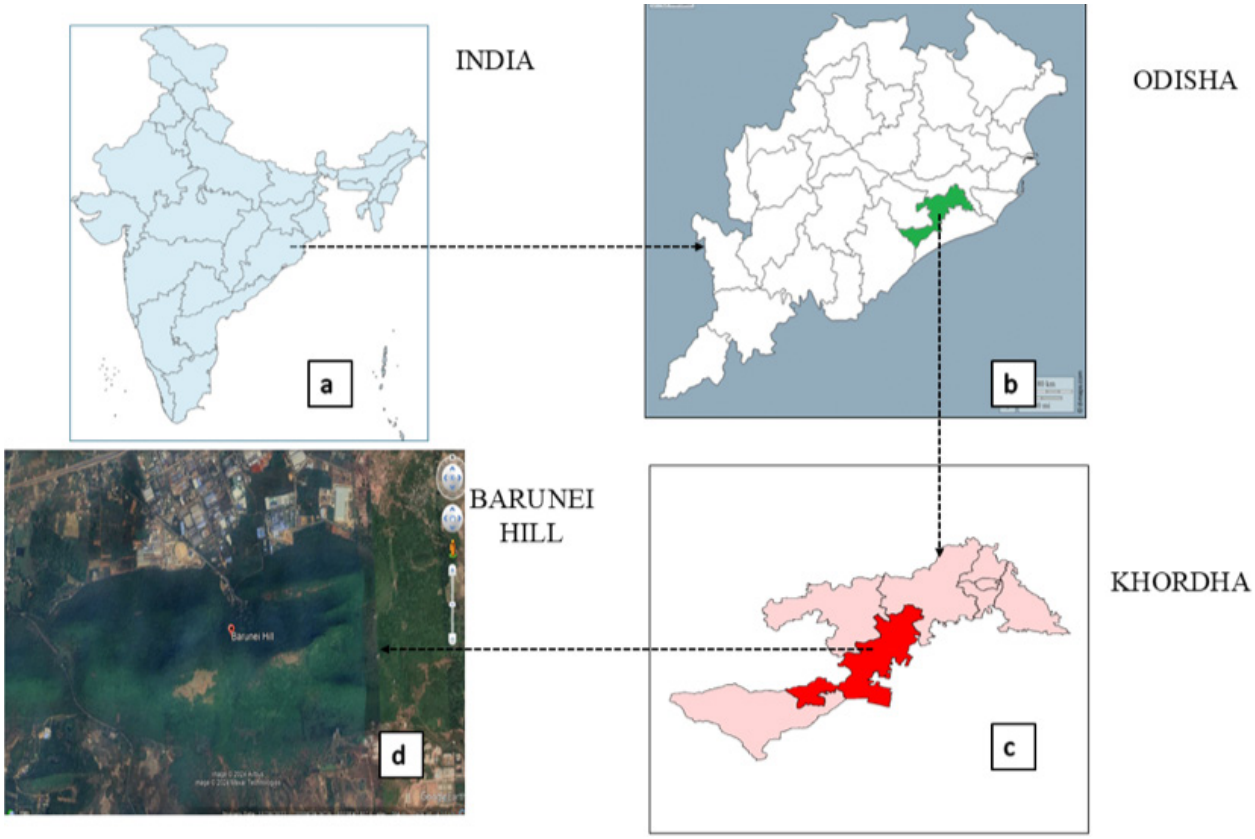


Image 1. Map showing study area: a—India | b—Odisha | c—Khordha | d—Barunei Hill.



Image 2. Sixteen zones covering exploration of the vegetation of Barunei Hill.

Additionally, the voucher specimens were carefully documented and archived in the Department of Botany, Centurion University of Technology and Management, Odisha, for future research and reference purposes. The collected data were quantitatively analyzed for the entire plant community by assessing the number of taxa at the species, genus, and family level. Taxon-level analysis was also conducted separately for individual communities of trees, shrubs, herbs, lianas, twiners and climbers.

RESULT AND DISCUSSION

According to the Flora of Odisha (Saxena & Brahmam 1996), 4.58% native species were recorded of the total 2,727 plant species in the present study. The present study represents 34.4% of tree species, 29.6% of herbs, 23.2% of shrubs, and 12.8% of lianas/twiners/climbers (Image 3). A total of 125 native plant species belonging to 112 genera in 50 families were enumerated (Table 1). The trees represented 43 species in 39 genera and 24 families. The shrubs represented 29 species in 26 genera and 15 families. The herbs represented 37 species in 34 genera and 20 families. The lianas/twiners/climbers represented 16 species in 16 genera and 11 families (Image 4). The top 10 dominant families with the highest number of species include Fabaceae (11), Malvaceae (11), Acanthaceae (11), Rubiaceae (7), Euphorbiaceae (6), Rutaceae (6), Apocynaceae (5), Cyperaceae (4), Lamiaceae (4), and Poaceae (3) (Image 5). At the genus level, *Barleria* and *Cyperus* each represented four species, *Diospyros* three species, and *Bridelia*, *Ficus*, *Grewia*, *Sida*, and *Ziziphus* each represented two species.

The species-to-genera and genera-to-family ratio are important for taxonomic diversity assessment. This study shows the species-to-genera ratio is 1.1 (125:112), and the genera-to-family ratio is 2.24 (112:50) for the native plant community, whereas in the flora of Odisha, species-to-genera ratio was 2.6 (2727:1048), and the genera-to-family ratio was 4.7 (1048:222). The tree community shows the species to genera ratio is 1.10 (43:39), and the genera-to-family ratio is 1.62 (39:24). Shrub community shows species to genera ratio is 1.11 (29:26) and genera to family ratio is 1.73 (26: 15). In LTC community, species to genera ratio is 1 (16:16) which indicates high level of taxonomic diversity as each genus is represented by a single species, and genera to family ratio is 1.45 (16:11). In herb community species to genera ratio is 1.08 (37:34), and genera to family ratio is 1.7 (34:20).

The dominant families in tree species are Rubiaceae (5), Euphorbiaceae (4), Rutaceae (3), Ebenaceae (3), Moraceae (3), Malvaceae (3), Apocynaceae (2), Meliaceae (2), Fabaceae (2) and Anacardiaceae (2) (Image 6). Dominant families in shrub species are Acanthaceae (7), Fabaceae (5), Malvaceae (3), Rutaceae (3) (Image 7). The LTC community comprised species belonging to 11 families, of which Fabaceae had the highest representation (3 species), followed by Apocynaceae, Convolvulaceae, and Menispermaceae (2 species each) (Image 8). Malvaceae (5) family was found with the highest number of herb species, followed by Acanthaceae (4), Cyperaceae (4), Poaceae (3), Pteridaceae (3), Commelinaceae (2), Euphorbiaceae (2) and Lamiaceae (2) (Image 9).

Vegetation of Barunei Hill is of dry deciduous forest. Other forest patches found were tropical dry deciduous forest, scrubland and bamboo forest with rocky outcrops. *Mangifera indica*, *Elephantopus scaber*, *Dioscorea bulbifera*, *Mallotus philippensis*, *Artocarpus heterophyllus* and *Azadirachta indica* are evergreen species. *Gardenia latifolia*, *Lannea coromandelica*,

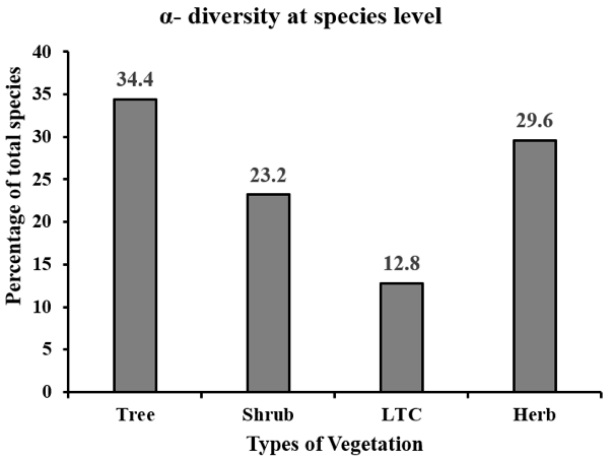


Image 3. α-diversity of vegetation at the native species level.

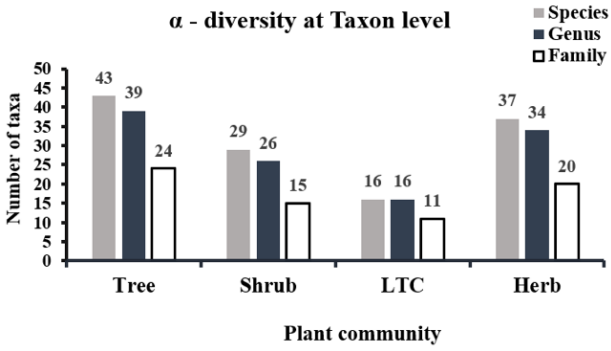


Image 4. α-diversity of plant communities at the taxon (native species) level.

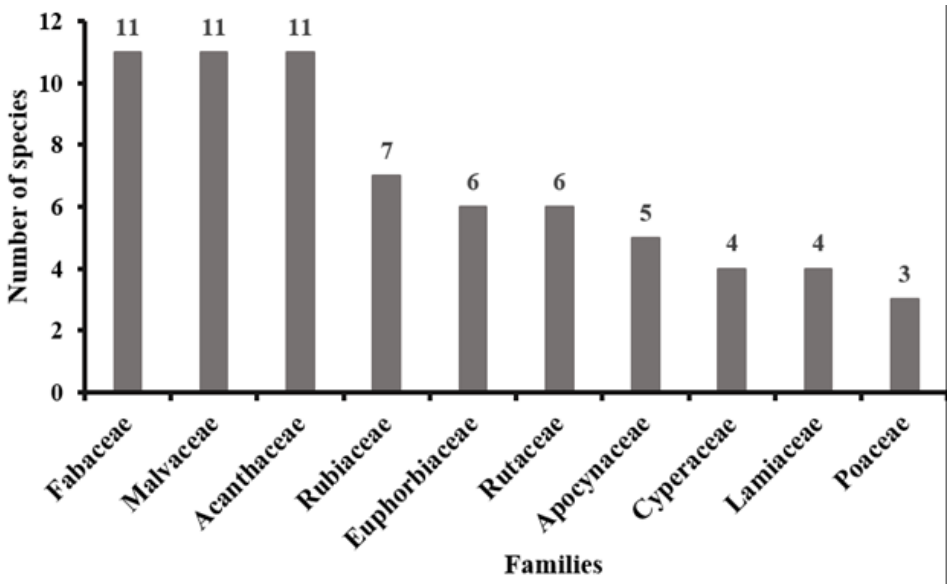


Image 5. Ten dominant families in the native plant community.

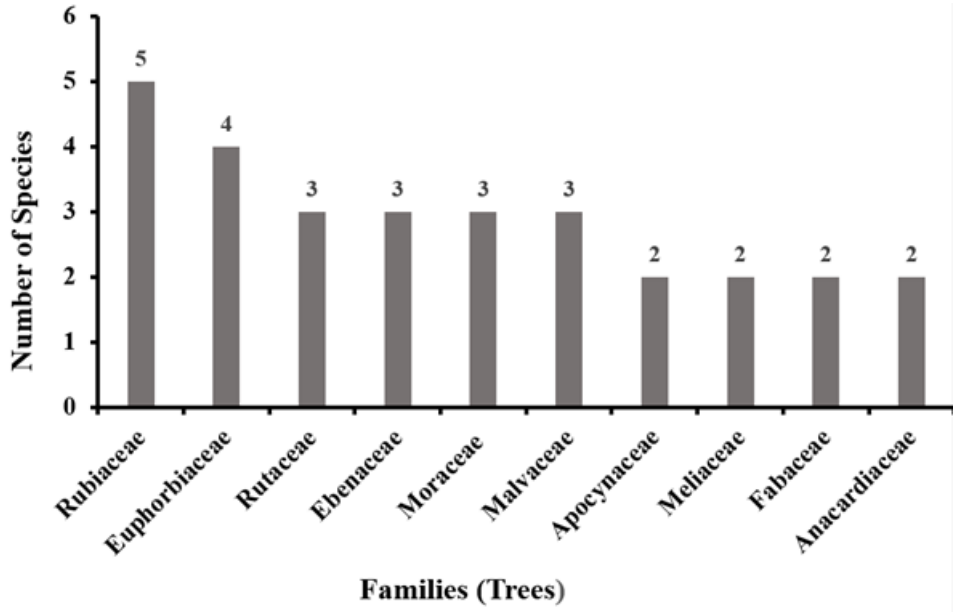


Image 6. Ten dominant families of tree communities (native species).

Cassia fistula, *Diospyros ferrea*, *Diospyros montana*, *Grewia hirsute*, *Helicteres isora*, *Holarrhena pubescens*, *Ventilago denticulata*, *Senna tora*, *Sida cordata*, *Benkara malbarica*, *Taxotrophis taxoides*, *Vitex pinnata*, *Suregada multiflora*, *Atalantia monophyla*, *Glycosmis pentaphylla*, *Trema orientalis*, *Psydrax dicoccos*, and *Calamus guruba* are common species in Barunei Hill. *Holarrhena pubescens*, *Helicteres isora*, *Bambusa vulgaris* and *Diospyros melanoxylon* indicate the presence of mixed bamboo forest. Some species like *Clerodendrum infortunatum*, *Combretum roxburghii*, *Cassia fistula*, *Cleistanthus monoicus*, and *Alangium salviifolium* were frequently observed as low height vegetation contributing to the woody species of the hill. In this forest, some regions are found moist and shady, hosting fern species like *Adiantum caudatum* and *Pteris pellucid*. Another fern, *Mickelopteris cordata*, grows within the rock fractures having moisture rich soil.

The present work shows that five out of 10 families, namely, Fabaceae, Acanthaceae, Euphorbiaceae,

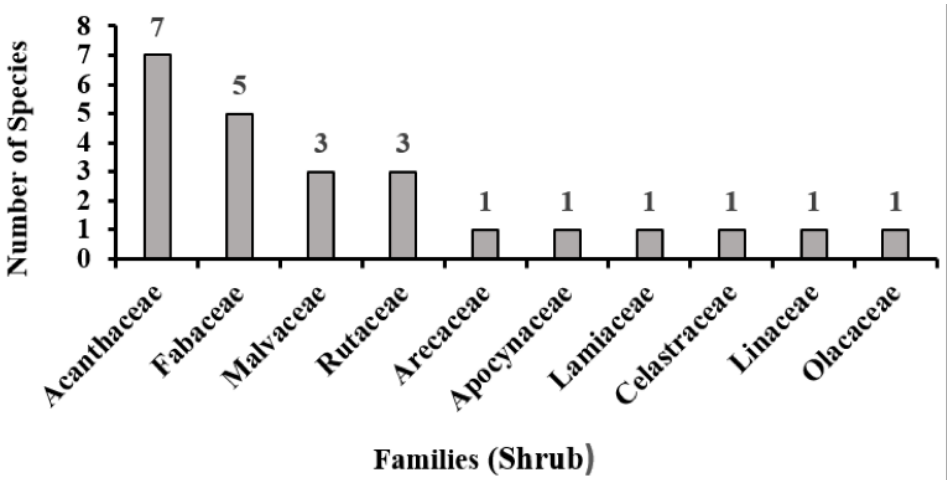


Image 7. Ten dominant families of shrub communities (native species).

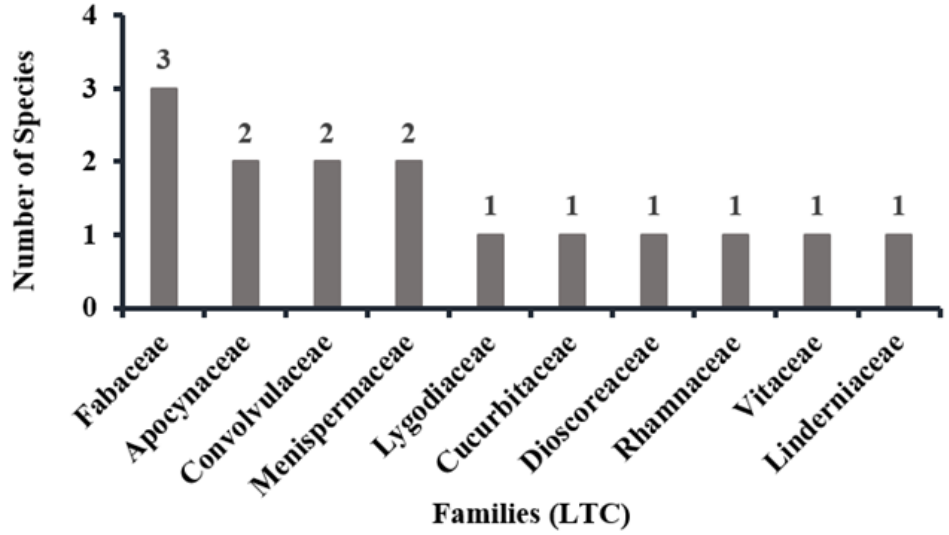


Image 8. Ten dominant families of lianas/ twiners/climbers communities (native species).

Rubiaceae, and Cyperaceae are common with other floristic studies on Eastern Ghats biogeographic zone. These families have a remarkable presence in different geographical regions of the Eastern Ghats.

In the study region, the peak flowering season for many plant species is January–March. *Ochna obtusata*, with yellow flowers, produces a pleasant scent during March (Image 11a). *Jasminum arborescens* is a white-flowered plant found on the upper slopes of the hills (Image 11b). The tree, *Eugenia roxburghii*, blooms in January and produces fragrant flowers that attract bees (Image 11c). *Capparis brevispina* is a shrub to small tree known for its aromatic blossoms (Image 11d). These naturally fragrant plants show great potential for bio-prospecting and could be used in the future for making perfumes, incense sticks (agarbatti), and other natural air fresheners.

According to the IUCN Red List status of the 149 species recorded, 96 species have not been assessed, 51 species are 'Least Concern', one species is 'Data Deficient', and one species is 'Critically Endangered' (Image 10). A herb, *Eriocaulon sharmae,* found near a moist place, is 'Critically Endangered' according to the IUCN Red List (Image 11g).

Calamus guruba is abundantly present in this area. Local communities utilize this plant stem to produce daily-use products like baskets, furniture, frames, walking sticks and various Household products (Image 11h). *Taxotrophis taxoides* is a small tree with marketable and edible fruit. The species has high economic potential,

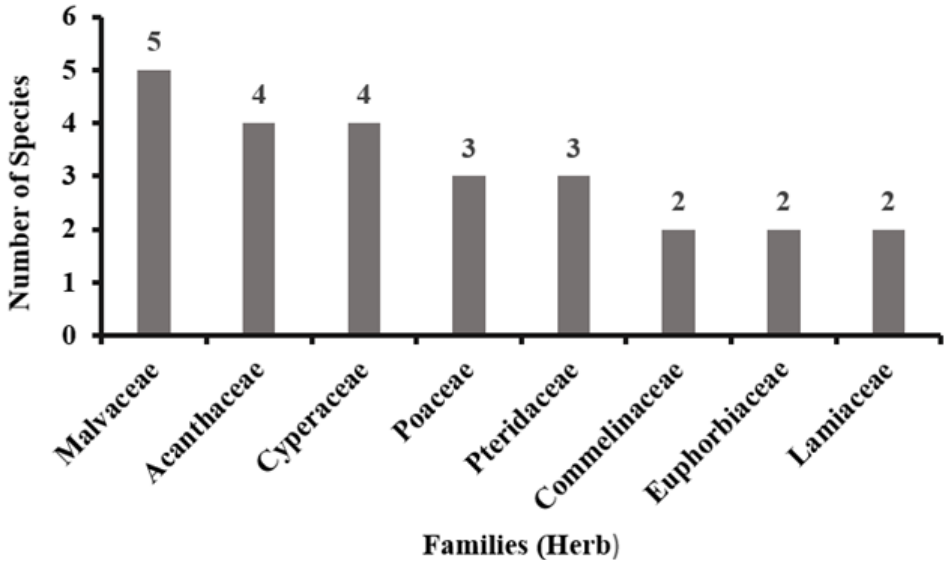


Image 9. Ten dominant families of herb communities (native species).

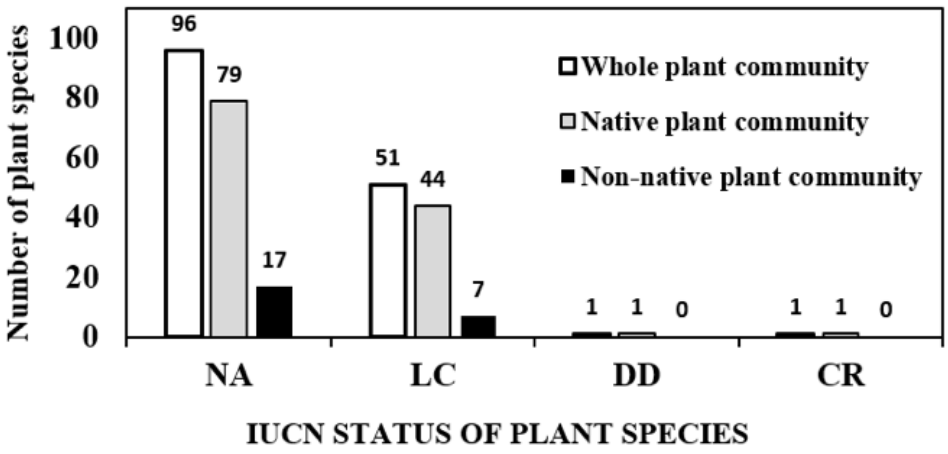


Image 10. IUCN Red List categories of plant list.

as the fruits are sold for Rs. 200–250 per kilogram (Image 11i). It holds significant potential as a sustainable resource, making conservation efforts essential to ensure its future viability and provide local livelihoods.

The Barunei Hill ecosystem is undergoing gradual degradation due to increasing anthropogenic pressures. Local communities depend on the forest for their livelihoods by collecting medicinal plants, fuelwood, timber, and other non-timber forest products. Unsustainable harvesting of forest resources, illegal logging, and human-induced wildfires have contributed to habitat degradation and the decline of plant diversity. In addition, the improper disposal of plastic and glass waste within the forest has adversely affected the environment. Rapid urbanization and industrial development around the hill have further intensified habitat loss, fragmentation, and ecological disturbance. Collectively, these anthropogenic activities pose a significant threat to the long-term conservation and ecological integrity of the Barunei Hill ecosystem.

CONCLUSION

Barunei Hill is home to a wide range of plant diversity. *Azadirachta indica*, *Artocarpus heterophyllus* and *Mangifera indica* contribute to the evergreen forest patches. Fabaceae, Malvaceae, Acanthaceae, Rubiaceae, and Rutaceae were among the dominant families and were also well represented in the Eastern

Table 1. List of plant species recorded along with their family, habit and IUCN Red List status.

	Botanical name	Family	Habit	IUCN Red List status	Native/Non-native
1	*Abrus precatorius* L.	Fabaceae	Climber	Least Concern	Native
2	*Abutilon indicum* (L.) Sweet	Malvaceae	Shrub	Least Concern	Native
3	*Adiantum caudatum* L.	Pteridaceae	Fern	Not assessed	Native
4	*Aganosma heynei* (Spreng.) I.M.Turner	Apocynaceae	Climber	Not assessed	Native
5	*Alangium salviifolium* (L.f.) Wangerin	Cornaceae	Tree	Least Concern	Native
6	*Allophylus serratus* (Roxb.) Kurz	Sapindaceae	Tree	Least Concern	Native
7	*Alstonia scholaris* (L.) R.Br	Apocynaceae	Tree	Least Concern	Native
8	*Alternanthera sessilis* (L.) DC.	Amaranthaceae	Herb	Least Concern	Native
9	*Ampelocissus latifolia* (Roxb.) Planch.	Vitaceae	Climber	Not assessed	Native
10	*Anacardium occidentale* L.	Anacardiaceae	Tree		Non-native
11	*Andrographis paniculata* (Burm.f.) Wall. ex Nees	Acanthaceae	Herb	Least Concern	Native
12	*Artocarpus heterophyllus* Lam.	Moraceae	Tree		Non-native
13	*Atalantia monophylla* (Roxb.) A. DC.	Rutaceae	Tree	Not assessed	Native
14	*Azadirachta indica* A. Juss.	Meliaceae	Tree	Least Concern	Native
15	*Bambusa vulgaris* Schrad. ex J.C.Wendl	Poaceae	Shrub		Non-native
16	*Barleria cristata* L.	Acanthaceae	Shrub	Not assessed	Native
17	*Barleria cuspidata* B.Heyne ex Nees	Acanthaceae	Shrub	Not assessed	Native
18	*Barleria prionitis* L.	Acanthaceae	Shrub	Not assessed	Native
19	*Barleria strigosa* Willd.	Acanthaceae	Shrub	Not assessed	Native
20	*Benkara malabarica* (Lam) Tir.	Rubiaceae	Tree	Not assessed	Native
21	*Blepharis maderaspatensis* (L.) B.Heyne ex Roth	Acanthaceae	Herb	Not assessed	Native
22	*Bonnaya ciliata* (Colsm.) Spreng.	Linderniaceae	Herb	Least Concern	Native
23	*Borassus flabellifer* L.	Arecaceae	Tree	Not assessed	Native
24	*Brachypterum scandens* (Roxb.) Wight & Arn. ex Miq.	Fabaceae	Shrub	Not assessed	Native
25	*Bridelia retusa* (L.) A. Juss	Euphorbiaceae	Tree	Least Concern	Native
26	*Bridelia tomentosa* Blume	Euphorbiaceae	Tree	Least Concern	Native
27	*Cajanus scarabaeoides* (L.) Thouars	Fabaceae	Climber	Not assessed	Native
28	*Calamus guruba* Buch.-Ham. ex Mart.	Arecaceae	Shrub	Not assessed	Native
29	*Canscora diffusa* (Vahl) R.Br. ex Roem. & Schult.	Gentianaceae	Herb	Not assessed	Native
30	*Capparis brevispina* DC.	Capparaceae	Tree	Not assessed	Native
31	*Cardiospermum halicacabum* Linn.	Sapindaceae	Herb	Least Concern	Native
32	*Carissa spinarum* L.	Apocynaceae	Shrub	Least Concern	Native
33	*Cascabela thevetia* (L.) Lippold	Apocynaceae	Tree		Non-native
34	*Cassia fistula* L.	Fabaceae	Tree	Least Concern	Native
35	*Cassytha filiformis* L.	Lauraceae	Climber	Not assessed	Native
36	*Cipadessa baccifera* (Roxb. ex Roth) Miq.	Meliaceae	Tree	Least Concern	Native
37	*Cissampelos pareira* L.	Menispermaceae	Climber	Not assessed	Native
38	*Citrus aurantiifolia* (Christm.) Swingle	Rutaceae	Shrub	Not assessed	Native
39	*Cleistanthus monoicus* (Lour.) Müll. Arg.	Phyllanthaceae	Tree	Not assessed	Native
40	*Cleome rutidosperma* DC.	Cleomaceae	Herb	Not assessed	Non-native
41	*Clerodendrum infortunatum* L.	Lamiaceae	Shrub	Not assessed	Native
42	*Coleus strobilifer* (Roxb) A. J. Paton	Lamiaceae	Herb	Not assessed	Native
43	*Combretum roxburghii* Spreng.	Combretaceae	Tree	Not assessed	Native
44	*Commelina benghalensis* L.	Commelinaceae	Herb	Least Concern	Native

	Botanical name	Family	Habit	IUCN Red List status	Native/Non-native
45	*Corchorus aestuans* L.	Malvaceae	Herb	Not assessed	Native
46	*Crotalaria alata* Buch.-Ham. ex D.Don	Fabaceae	Shrub	Least Concern	Native
47	*Croton sparsiflorus* Baill.	Euphorbiaceae	Herb	Not assessed	Native
48	*Cyanotis axillaris* (L.) D.Don ex Sweet	Commelinaceae	Herb	Least Concern	Native
49	*Cyperus cuspidatus* Kunth	Cyperaceae	Herb	Not assessed	Native
50	*Cyperus neochinensis* (Tang & F.T.Wang) Bauters	Cyperaceae	Herb	Not assessed	Native
51	*Cyperus rotundus* L.	Cyperaceae	Herb	Least Concern	Native
52	*Cyperus strigosus* L.	Cyperaceae	Herb	Not assessed	Native
53	*Dactyloctenium aegyptium* (L.) Wild	Poaceae	Herb	Not assessed	Native
54	*Datura metel* L.	Solanaceae	Shrub		Non-native
55	*Delonix regia* (Bojer ex Hook.) Raf.	Fabaceae	Tree		Non-native
56	*Dioscorea bulbifera* L.	Dioscoreaceae	Climber	Not assessed	Native
57	*Diospyros ferrea* (Willd.) Bakh.	Ebenaceae	Tree	Not assessed	Native
58	*Diospyros melanoxylon* Roxb.	Ebenaceae	Tree	Not assessed	Native
59	*Diospyros montana* Roxb.	Ebenaceae	Tree	Not assessed	Native
60	*Dracaena roxburghiana* (Schult. & Schult.f.) Byng & Christenh.	Asparagaceae	Herb	Not assessed	Native
61	*Ecbolium viride* (Forssk.) Alston	Acanthaceae	Shrub	Not assessed	Native
62	*Elephantopus scaber* L.	Asteraceae	Herb	Least Concern	Native
63	*Eriocaulon sharmae* R.Ansari & N.P.Balakr.	Eriocaulaceae	Herb	Critically Endangered	Native
64	*Eucalyptus globulus* Labill.	Myrtaceae	Tree		Non-native
65	*Eugenia roxburghii* DC.	Myrtaceae	Tree	Not assessed	Native
66	*Euphorbia hirta* L.	Euphorbiaceae	Herb	Least Concern	Native
67	*Ficus hispida* L.f.	Moraceae	Tree	Least Concern	Native
68	*Ficus racemosa* L.	Moraceae	Tree	Least Concern	Native
69	*Gardenia latifolia* William Aiton.	Rubiaceae	Tree	Least Concern	Native
70	*Glinus oppositifolius* (L.) Aug DC	Molluginaceae	Herb	Not assessed	Native
71	*Gliricidia sepium* (Jacq.) Kunth	Fabaceae	Tree		Non-native
72	*Globba racemosa* Sm.	Zingiberaceae	Herb	Not assessed	Native
73	*Glycosmis pentaphylla* (Retz.) DC.	Rutaceae	Tree	Not assessed	Native
74	*Grewia abutilifolia* Vent. ex Juss.	Malvaceae	Tree	Least Concern	Native
75	*Grewia hirsuta* Vahl	Malvaceae	Shrub	Least Concern	Native
76	*Gymnosporia emarginata* (Willd.) Thwaites	Celastraceae	Shrub	Not assessed	Native
77	*Helicteres isora* L.	Malvaceae	Tree	Least Concern	Native
78	*Hibiscus hirtus* L.	Malvaceae	Herb	Not assessed	Native
79	*Holarrhena pubescens* Wall. ex G.Don	Apocynaceae	Tree	Least Concern	Native
80	*Hugonia mystax* L.	Linaceae	Shrub	Not assessed	Native
81	*Ichnocarpus frutescens* (L.) W.T.Aiton	Apocynaceae	Climber	Not assessed	Native
82	*Ipomoea obscura* (L.) Ker Gawl.	Convolvulaceae	Climber	Not assessed	Native
83	*Jasminum arborescens* Roxb.	Oleaceae	Shrub	Not assessed	Native
84	*Jatropha gossypifolia* L.	Euphorbiaceae	Shrub		Non-native
85	*Knoxia sumatrensis* (Retz.) DC.	Rubiaceae	Shrub	Not assessed	Native
86	*Lannea coromandelica* (Houtt.) Merr.	Anacardiaceae	Tree	Least Concern	Native
87	*Lepidagathis hamiltoniana* Wall.	Acanthaceae	Herb	Least Concern	Native
88	*Luffa aegyptiaca* Mill.	Cucurbitaceae	Climber	Not assessed	Native
89	*Lygodium flexuosum* (Linn.) Sw	Lygodiaceae	Climber	Not assessed	Native

	Botanical name	Family	Habit	IUCN Red List status	Native/Non-native
90	*Mallotus philippensis* (Lam.) Müll.Arg.	Euphorbiaceae	Tree	Least Concern	Native
91	*Mangifera indica* L.	Anacardiaceae	Tree	Data Deficient	Native
92	*Melochia corchorifolia* L.	Malvaceae	Herb	Least Concern	Native
93	*Memecylon umbellatum* Burm.f.	Melastomataceae	Shrub	Not assessed	Native
94	*Merremia tridentata* (L.) Hallier f. subsp. *hastata*	Convolvulaceae	Climber	Not assessed	Native
95	*Mickelopteris cordata* (Hook. & Grev.) Fraser-Jenk.	Pteridaceae	Fern	Not assessed	Native
96	*Mimosa pudica* L.	Fabaceae	Herb		Non-native
97	*Mirabilis jalapa* L.	Nyctaginaceae	Herb		Non-native
98	*Mitracarpus hirtus* (L.) DC.	Rubiaceae	Herb		Non-native
99	*Mollugo verticillata* L.	Molluginaceae	Herb		Non-native
100	*Morinda pubescens* Sm.	Rubiaceae	Tree	Not assessed	Native
101	*Mucuna pruriens* (L.) DC.	Fabaceae	Climber	Least Concern	Native
102	*Murraya koenigii* (L.) Spreng.	Rutaceae	Shrub	Not assessed	Native
103	*Naringi crenulata* (Roxb.) Nicolson	Rutaceae	Tree	Least Concern	Native
104	*Nicoteba betonica* (L.) Lindau	Acanthaceae	Herb	Least Concern	Native
105	*Ochna obtusata* DC.	Ochnaceae	Tree	Not assessed	Native
106	*Ocimum americanum* L.	Lamiaceae	Herb	Not assessed	Native
107	*Olax scandens* Roxb.	Olacaceae	Shrub	Not assessed	Native
108	*Oldenlandia corymbosa* Wight & Arn.	Rubiaceae	Herb	Not assessed	Native
109	*Oplismenus burmanni* (Retz.) P.Beauv.	Poaceae	Herb	Not assessed	Native
110	*Panicum trichoides* Sw.	Poaceae	Herb		Non-native
111	*Parthenium hysterophorus* L.	Asteraceae	Herb		Non-native
112	*Passiflora foetida* L.	Passifloraceae	Climber		Non-native
113	*Phyllanthus vitis-idaea* (Burm.f.) J.Koenig ex Roxb.	Phyllanthaceae	Shrub	Not assessed	Native
114	*Pleurolobus gangeticus* (L.) J.St.-Hil. ex H.Ohashi & K.Ohashi	Fabaceae	Shrub	Not assessed	Native
115	*Polyalthia suberosa* (Roxb.) Thwaites	Annonaceae	Tree	Not assessed	Native
116	*Pseudarthria viscida* (L.) Wight & Arn	Fabaceae	Shrub	Not assessed	Native
117	*Pseuderanthemum latifolium* (Vahl) B.Hansen	Acanthaceae	Shrub	Not assessed	Native
118	*Psydrax dicoccos* Gaertn.	Rubiaceae	Tree	Least Concern	Native
119	*Pteris pellucida* C.Presl	Pteridaceae	Fern	Not assessed	Native
120	*Pterospermum xylocarpum* (Gaertn.) Santapau & Wagh	Malvaceae	Tree	Not assessed	Native
121	*Ricinus communis* L.	Euphorbiaceae	Shrub		Non-native
122	*Ruellia prostrata* Poir.	Acanthaceae	Shrub	Not assessed	Native
123	*Senegalia pennata* (L.) Maslin	Fabaceae	Tree	Least Concern	Native
124	*Senna tora* (L.) Roxb.	Fabaceae	Shrub		Non-native
125	*Sesamum indicum* L.	Pedaliaceae	Herb	Not assessed	Native
126	*Shorea robusta* C.F.Gaertn.	Dipterocarpaceae	Tree	Least Concern	Native
127	*Sida acuta* Burm.f.	Malvaceae	Shrub	Not assessed	Native
128	*Sida cordata* (Burm.f.) Borss.Waalk.	Malvaceae	Herb	Not assessed	Native
129	*Solanum americanum* Mill.	Solanaceae	Herb		Non-native
130	*Solanum sisymbriifolium* Lam.	Solanaceae	Shrub		Non-native
131	*Stachytarpheta urticifolia* Sims	Verbenaceae	Herb		Non-native
132	*Stereospermum colais* (Buch.-Ham. ex Dillwyn) Mabb.	Bignoniaceae	Tree	Not assessed	Native
133	*Suregada multiflora* (A. Juss.) Baill	Euphorbiaceae	Tree	Not assessed	Native
134	*Tarenna asiatica* (L.) Kuntze ex K.Schum.	Rubiaceae	Tree	Not assessed	Native

	Botanical name	Family	Habit	IUCN Red List status	Native/Non-native
135	*Taxotrophis taxoides* (B.Heyne ex Roth) Chew ex	Moraceae	Tree	Not assessed	Native
136	*Tephrosia purpurea* (L.) Pers.	Fabaceae	Shrub	Not assessed	Native
137	*Tinospora cordifolia* (Willd.) Hook.f. & Thomson	Menispermaceae	Climber	Not assessed	Native
138	*Torenia crustacea* (L.) Cham. & Schltdl.	Linderniaceae	Climber	Least Concern	Native
139	*Trema orientalis* (L.) Blume	Cannabaceae	Tree	Least Concern	Native
140	*Tridax procumbens* L.	Asteraceae	Herb		Non-native
141	*Triumfetta pentandra* A.Rich.	Malvaceae	Herb	Not assessed	Native
142	*Urochloa panicoides* P.Beauv.	Poaceae	Herb	Least Concern	Native
143	*Ventilago denticulata* Willd.	Rhamnaceae	Climber	Not assessed	Native
144	*Vigna vexillata* (L.) A.Rich	Fabaceae	Herb	Not assessed	Native
145	*Vitex pinnata* L.	Lamiaceae	Tree	Least Concern	Native
146	*Xanthium strumarium* L.	Euphorbiaceae	Shrub	Not assessed	Non-native
147	*Zanthoxylum asiaticum* (L.) Appelhans, Groppo & J.Wen	Rutaceae	Shrub	Not assessed	Native
148	*Ziziphus mauritiana* Lam.	Rhamnaceae	Tree	Least Concern	Native
149	*Ziziphus oenopolia* (L.) Mill.	Rhamnaceae	Shrub	Least Concern	Native



Image 11. Plant species for bio-prospecting: a—*Ochna obtusata* | b—*Jasminum arborescens* | c—*Eugenia roxburghii* | d—*Capparis brevispina* (aromatic plants) | e—*Psydrax dicoccos* | f—*Lepidagathis hamiltoniana* | g—*Eriocaulon sharmae* (Critically Endangered) | h—*Calamus guruba* | i—*Taxotrophis taxoides* (economically important plants). © Snigdha Behera and Abanikanta Bhadra.

Ghat biogeographic zone floristic studies. Human activity is putting the ecosystem in jeopardy. Occupation of forest lands by factories in the periphery of Barunei Hill, plastic pollution, forest fires, and extraction of resources and invasion of 16.11% non-native species are causing ecosystem degradation. The region is experiencing habitat loss as a result of the above impacts. This study provides baseline information for conservation

initiatives and policymakers to take proactive steps to safeguard the Barunei Hill, an important green buffer for Bhubaneswar City, against the backdrop of rapid urbanization and industrialization in Khordha District. Increased public participation in conservation efforts and reduced exploitation of natural resources are needed for maintaining the ecological balance and legacy of the key landscape 'Barunei Hill' in the capital city of Odisha.

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