
Croton scabiosus


Decalepis hamiltonii


Dipcadi montanum var. madrasicum


Drimia nagarjunae

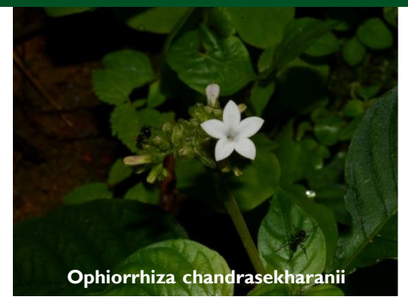

Eriolaena lushingtonii


Habenaria panigrahiana

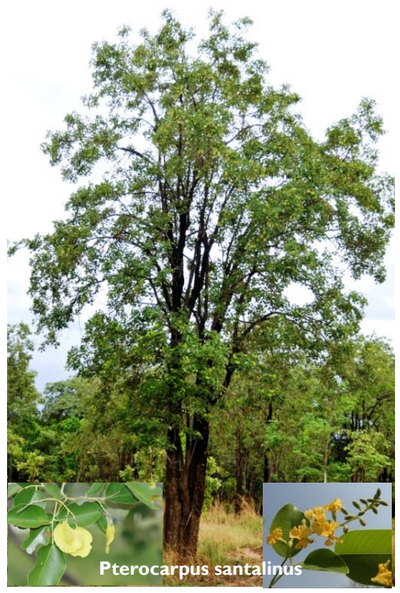

Hildegardia populifolia


Maerua apetala


Oberonia brunoniana


Ophiorrhiza chandrasekharanii


Pimpinella tirupatiensis


Pterocarpus santalinus


Syzygium alternifolium


Rhynchosia beddomei


Themeda odishae

Endemic Flowering Plants of Eastern Ghats, India

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1. Argyreia cuneata
2. Strobilanthes kunthiana
3. Ceropegia spiralis
4. Shorea tumbuggaia
5. Dendrobium aqueum
6. Barleria stocksii

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Eastern Ghats, the broken hill ranges lying on the eastern side of the Deccan Plateau of Peninsular India, located between $11^0 30'–22^0$ N and $76^0 50'–86^0 30'$ E in a north-east to south-west strike, covers an area of about 75,000 km^2 with an average width of 200 km in the north and 100 km in the south. It extends over a length of 1750 km between the rivers Mahanadi (in Odisha) and Vaigai (in Tamil Nadu) along the east coast. Geographers consider the Similipal massif lying to the north-west of the Khondmal hills in the Phulbani district of Odisha as the northern starting point of Eastern Ghats. Towards the south, the Eastern Ghats runs in a westward direction meeting the Western Ghats in Nilgiris, Tamil Nadu.

Eastern Ghats spreads over states of Andhra Pradesh, Karnataka, Odisha, Tamil Nadu and Telangana. The region has a most humid tropical monsoon climate, characterized by moderate to high year-round temperatures/seasonal heavy rainfall. The tropical climate is experienced in a strip of northern Eastern Ghats of Odisha and the tropical wet and dry climate, drier than areas with a tropical monsoon climate prevails over most of the parts except for a semi-arid rain shadow region to its south. Winter and early summer with minimum temperature above 18°C, summer is exceedingly hot with temperatures exceeding 45°C and rainy season from June to September with annual rainfall averaging from 16 to 60 cm across the region. During the rainy season relative humidity is quite high (70–80%). The soil types found in the Eastern Ghats are black, red and alluvial.

As per Champion & Seth (1968) classification nine different forest types are met within the Eastern Ghats, namely Evergreen Forests, Tropical Semi-evergreen Forests, Tropical Moist Deciduous forests (Northern Tropical Moist Deciduous Forests (Sal Forests), Southern Tropical Moist Deciduous Forests (non-Sal forests), Southern Tropical Moist Deciduous Riverine Forests), Southern Tropical Dry Deciduous Forests, Northern Mixed Dry Deciduous Forests, Dry Savannah forests, Tropical Thorn (Scrub) Forests and Tropical Dry Evergreen Forests.

Phytogeographically, the Eastern Ghats is treated as a part of Deccan Province. Eastern Ghats is rich in plant diversity due to geographic factors, high seasonality and variations in elevation. This hill range is home for wide array of flowering plants; there are over 4000 flowering plant species (Krishnamurthy & al., 2014). A total of 166 flowering plant taxa are exclusively endemic to the Eastern Ghats (Singh & al., 2015). Some of the well-known endemic species found in this hill ranges are: *Acacia donaldii* Haines (Leguminosae: Mimosoideae), *Albizia thompsonii* Brandis (Leguminosae: Mimosoideae), *Argyreia arakuensis* N.P. Balakr. (Convolvulaceae), *Boswellia ovalifoliolata* N.P. Balakr. & A.N. Henry (Burseraceae), *Brachystelma brevitubulatum* Gamble (Apocynaceae), *B. glabrum* Hook.f. (Apocynaceae), *Ceropegia spiralis* Wight (Apocynaceae), *Croton scabiosus* Bedd. (Euphorbiaceae), *Decalepis hamiltonii* Wight & Arn. (Apocynaceae), *Decaschistia cuddapahensis* T.K. Paul & M.P. Nayar (Malvaceae), *Dimeria mahendragiriensis* Ravi & al. (Poaceae), *D. orissae* Bor (Poaceae), *Dimorphocalyx kurnoolensis* R. Venkatar. & Pull. (Euphorbiaceae), *Drimia nagarjunae* (Hemadri & Swahari) Anand Kumar (Asparagaceae), *Eria meghasaniensis* (S. Misra) S. Misra (Orchidaceae), *Eriocaulon echinulatum* Mart. (Eriocaulaceae), *Eriolaena lushingtonii* Dunn (Malvaceae), *Glochidion tomentosum* Dalzell (Euphorbiaceae), *Habenaria panigrahiana* S. Misra (Orchidaceae), *Hardwickia binata* Roxb. (Leguminosae: Caesalpinioideae), *Hildegardia populifolia* Schott & Endl. (Malvaceae), *Homonoia intermedia* Haines (Euphorbiaceae), *Kalanchoe cherukondensis* Subba Rao & Kumari (Crassulaceae), *Lasiococca comberi* Haines (Euphorbiaceae), *Maerua apetala* (Spreng.) M. Jacobs (Capparaceae), *Ophiorrhiza chandrasekharanii* Subba Rao & Kumari (Rubiaceae), *Oryza jeyporensis* Govindasw. & K.H. Krishnam. (Poaceae), *Pimpinella tirupatiensis* N.P. Balakr. & Subram. (Apiaceae), *Pterocarpus santalinus* L.f. (Leguminosae: Faboideae), *Rhynchosia beddomei* Baker (Leguminosae: Faboideae), *Rhynchosia heynei* Wight & Arn. (Leguminosae: Faboideae), *Shorea tumbuggaia* Roxb. (Dipterocarpaceae), *Syzygium alternifolium* (Wight) Walp. (Myrtaceae), *Tephrosia calophylla* Bedd. (Leguminosae: Faboideae), *Terminalia pallida* Brandis (Combretaceae), *T. paniculata* Roth (Combretaceae), *Themeda mooneyi* Bor (Poaceae) and *Wendlandia gamblei* Cowan (Rubiaceae).

After the establishment of Deccan Regional Centre of Botanical Survey of India, major portion of the Eastern Ghats (Andhra Pradesh, Odisha and Telangana) is under the jurisdiction of this regional centre. During this decade, a number of new taxa have been described from the Eastern Ghats, which include *Brachystelma penchalakonense* Rasingam & al. (2013), *Tripogon tirumalae* Chorghe & al. (2013), *Glochidion tirupathiense* Rasingam & al. (2014), *Rhynchosia ravii* K. Prasad & A. Narayana Swamy (2014), *Tripogon mahendragiriensis* Chorghe & al. (2015), *Brachystelma annamacharyae* K. Prasad & al. (2016), *B. seshachalamense* K. Prasad & Prasanna (2016), *Euphorbia seshachalamensis* K. Prasad & Prasanna (2016), *Glochidion talakonense* M. Sankara Rao & al. (2016), *Themeda odishae* Chorghe & al. (2016), *Brachystelma mahendragiriense* K. Prasad (2017) and *Dimeria connivens* Hack. var. *roxburghiana* K.C. Mohan & Prasanna (2017).

Threats: The biodiversity, especially the plant diversity in the Eastern Ghats is under various anthropogenic pressures. The region also exhibits a range of negative consequences due to various natural disasters such as unusual heavy rainfalls, extreme temperature, change in edaphic environments, natural competition between native and invasive species, lack of pollination due to absence of pollinators or amicable environmental conditions, consequently no seed formation and low level natural regeneration in plants. Anthropogenic activities such as encroachment of forest lands for agricultural and various developmental activities, mining, artificial forest fires, grazing, tourism, illegal trade of economically and medicinally important plants, especially red sanders and medicinal plants and overexploitation of biological resources lead to destruction and fragmentation of natural habitats in the region.

Conservation: Due to various anthropogenic activities there is considerable reduction in the area of occupancy and extend of occurrence of many endemic species in the region. The centres of endemism in the Eastern Ghats deserve immediate action for effective conservation of endemic species. For their long term survival, they need to be conserved through "in situ" and "ex situ" conservation strategies. Protection of the natural habitats is the first line of defense for protection of endemic species effectively. There should strict and complete ban on encroachment of forest lands. Accidental or intentional introduction of invasive alien species in the forests should be carefully monitored. The State Forest Departments should create awareness by educating the local communities about the importance of conserving forests and environment and sustainable utilization of biological resources for posterity and involve them in conservation activities.


Veligonda Hills, Andhra Pradesh


Nallamala Hills, Telangana part


Andrographis beddomei


Andrographis glandulosa


Argyreia cuneata


Brachystelma ciliatum


Byttneria herbacea


Caralluma diffusa


Caralluma stalagmifera


Ceropegia juncea


Ceropegia spiralis


Cleome felina