AGRI MAGAZINE
(International E-Magazine for Agricultural Articles)
Volume: 02, Issue: 07 (July, 2025)
Available online at http://www.agrimagazine.in

A Living Landscape of Western Ghat: Flowering Plants Biodiversity of Kaas Plateau

Priya Bhusaraddi, Lalduhsanga, Poojashree N R and *Kiran K N
ICAR- Indian Institute of Horticultural Research, Bengaluru-560089, Karnataka, India
***Corresponding Author's email: geetharaj.kiru@gmail.com**

The western ghats are a key biodiversity hotspot in India, known for their extensive variety of plant and animal life with a high level of species uniqueness. The floral diversity across different areas of the western ghats in Maharashtra is well-documented due to its ecologically sensitive vegetation. The region is divided into coastal and plateau areas, each displaying different plant life. The native flora is shaped by the area's geographical and climatic conditions. The reserved forest, often referred as KaasPathar, located 25km west of Satara, Maharashtra. It is part of the Sahyadri sub cluster and designated as UNESCO world natural heritage site in 2012. Kaas (17° 43' N, 73° 49' E) is located in the central part of the Deccan plateau in Maharashtra at an elevation of 1,200m and spanning roughly 10km^2 (Awati, 2011). The plateau is characterized by its volcanic rock formation and base is basalt covered with 25 mm thin layer of soil resulting from erosion. The soil is neither black nor lateritic. Kaas lake serves as a perennial water source for the western part of Satara city via gravity-fed irrigation. The vegetation on the Kaas plateau mainly consists of herbaceous plants such as grasses, small shrubs and trees are found at the edges. It is famous for its seasonal wildflowers and the annual appearance of numerous endemic butterfly species in august and september. This Plateau is home to over 850 flowering plant species, including orchids, karvy shrub, and carnivorous plants like *Drosera Indica*.

Biodiversity on Kas plateau

Kaas is an exceptionally beautiful plateau adorned with vibrant wildflowers in a range of colours. Its unique ecosystem and high level of endemism make it a hotspot for biodiversity. Among the 850 species identified, 624 have been listed in the Red Data Book indicating their vulnerable status. Notably, 39 of these species are unique, underscoring its ecological significance and the critical need for its conservation. Bhattarai et al. (2012) identified 103 species of local concern on the Kas plateau and its surrounding areas. Chikane and Bhosale (2012) have documented 57 species of herpetofauna list in the Kas area. Several popular books have been published in both Marathi and English, including photos on KaasPathar. The herbaceous plant communities of this plateau were systematically surveyed between 2004 and 2006 as part of DST-funded project on plant communities of rocky plateaus. In a 25 square meter sampling area, the diversity index (H') was 3.88 with 40 herbaceous species reported in September 2004. This increased to H' = 3.971 with 29 herbaceous species in September 2005, resulting a rich herbaceous diversity.

Many of the species in Kaas, require high humidity and plentiful water, relying on the monsoon for survival. After the first monsoon rains, the plants emerge from dormancy, transforming the dry grass plateau into a lush green landscape covered with a colourful flowers. Kaas spans approximately 1800ha, over 600 species of wildflowers bloom during and after the monsoon season. In the past decade, this area has drawn the interest of tourists, botanists, and environmentalists. Shrotri et al. (2024) investigated the flowering phenology at Kaas and documented 76 herbaceous species, concluding that climatic variables played a role

in shaping their flowering patterns. Their findings also revealed that the plant community consisted of a minority of mass flowering (MF) species, accounting for approximately 30%, while the majority of around 70% were non-mass flowering (nMF) species. Several popular books have been published in both Marathi and English, including photo guides by Shrotri (2007), Shrikant Ingalhallikar ("Flowers of Kas," 2012), and another by the Satara Forest Department in 2012.

Kaas is renowned for its spectacular mass blooming of *Eriocaulon spp*., *Utricularia spp*., *Impatiens lawii*, and *Smithia spp*. The plateau features all the typical microhabitats and species complexes, supports a diverse array of invertebrates including large numbers of mating tiger beetles observed in September–October. The plateau shows signs of barking deer, hares, civets, gaur and rodents. Ruddy mongooses and rusty-spotted cats have been seen in the surrounding scrub area and leopards have been reported from the nearby forest. The endemic Malabar Lark is frequently observed nesting on the rocks.

Flowering plants found in kaas plateaue:

1. *Arisaema ghaticum*
2. *Chrysopogon castaneus*
3. *Eriocaulon epedunculatum*
4. *Eulalia shrirangii*
5. *Jansenella neglecta*

Table: List of flowers found at Kaas with their vernacular names:

Scientific name	Vernacular name	Scientific name	Vernacular name
Adenoon indicum	Mothi sonaki	*Hitchenia caulina*	Chavar
Aerids maculosum	Drupadi pushpa	*Impatiens oppositifolia*	Lal Terda
Aponogeton satarensis	Vaytura	*Ipomoea barlerioides*	Pink morning glory
Begonia crenata	Ambuti	*Memecylonum bellatum*	Anjani
Ceropegia jainii	Somada	*Murdannia lanuginosa*	Abolima
Ceropegia vincaefolia	Kandalipushpa	*Murdannia simplex*	Nilima
Ceropegia media	Medi Kharchudi	*Nymphoidesindicum*	Kumudini
Chlorophytum glaucoides	Musali	*Oberonia recurva*	Fairy orchids
Cyanotis tuberosa	Abhali	*Paracaryopsi scoelestina*	Nisurdi
Dendrobium barbatulum	Bharangee	*Paracaryopsis malbarica*	Kali Nisurdi
Dioscorea bulbifera	Dukkarkand	*Pinda concanensis*	Pinda
Dipcadi montanum	Deepkadee	*Rotala fimbriata*	Lilac Tassel flower
Drosera burmanni	Davbindu	*Rotala ritchiei*	Paner
Drosera indica	Gavati Davbindu	*Seneci obombyensis*	Sonki
Elaeocarpus glandulosus	Kaasa	*Senecio grahami*	Sanakee
Exacum tetragonum	Udichirayat	*Smithia agharkarii*	Lahan kawla
Flemingia nilgheriensis	Nilgiri	*Smithia hirsute*	Kavala
Habenaria heyneana	Toothbrush Orchid	*Trichosanthestri cuspidata*	Kondal
Habenaria longicorniculata	Sheput Habe-amri	*Utricularia purpurascens*	Seetecheeaasawe
Habenaria panchganiensis	Panchgani Habenaria	*Vigna vexillata*	Halunda

Threats to the Ecosystem

The ecosystem has suffered significant damage due to tourist activity, extensive plant collection by botanists, and other factors such as climate change. Also grazing and burning,

with domestic cattle competing with wild mammals to some extent. The road that crosses the plateau has also contributed to disturbances, including snake road kills. The addition of dung has led to eutrophication, and heavy trampling by cattle and visitors has created numerous paths across the area. The impact of these activities on the plateau's biodiversity is difficult to assess due to a lack of baseline data.

The visible ecological impacts include extensive vegetation trampling, damage to microhabitats, and solid waste issues. Less visible effects involve changes in land use in neighbouring areas and socio-economic and cultural shifts in local villages. Another major concern is the spread of invasive weeds, introduced through foreign soils, which threaten to outcompete native flora. These impacts are likely irreversible without immediate intervention. To address the influx of tourists, a joint forest management committee has been established. Another major concern is the spread of invasive weeds, introduced through foreign soils, which threaten to outcompete native flora. The lack of conservation efforts in the past has posed a persistent threat to the area's floral diversity. Currently, NGOs are actively working to restore and protect the severely impacted Kaas ecosystem.

References

1. Awati, A. (2011). A Geographical Study of Wild Flowers on Kas Plateau (Satara District). *International Referred Research Journal*, 3(30).
2. Bhattarai, U. Tetali, P. and Kelso, S. (2012). Contributions of vulnerable hydrogeomorphic habitats to endemic plant diversity on the Kas Plateau, Western Ghats. *SpringerPlus*, 1:25.
3. Chikane, S., Bhosale, H. S. (2012). Reptiles of Kaas, Northern Western Ghats, Maharashtra, India, with notes on habitat preferences, abundances and threats. *Sauria, 34*(3), 3-15.
4. Shrotri, S., Kaur, S., Dhargalkar, R., Najla, P.V. and Gowda, V. (2024). Mass flowering and flowering asynchrony characterise a seasonal herbaceous community in the Western Ghats. *BioRxiv*,11.