# Ancient Marathi literature reveals India’s savannas are not degraded forests

Centuries-old texts and oral traditions from western Maharashtra trace open, grassy landscapes back at least 750 years; experts urge a biocultural conservation approach and caution against tree-planting drives that misclassify grasslands as wastelands

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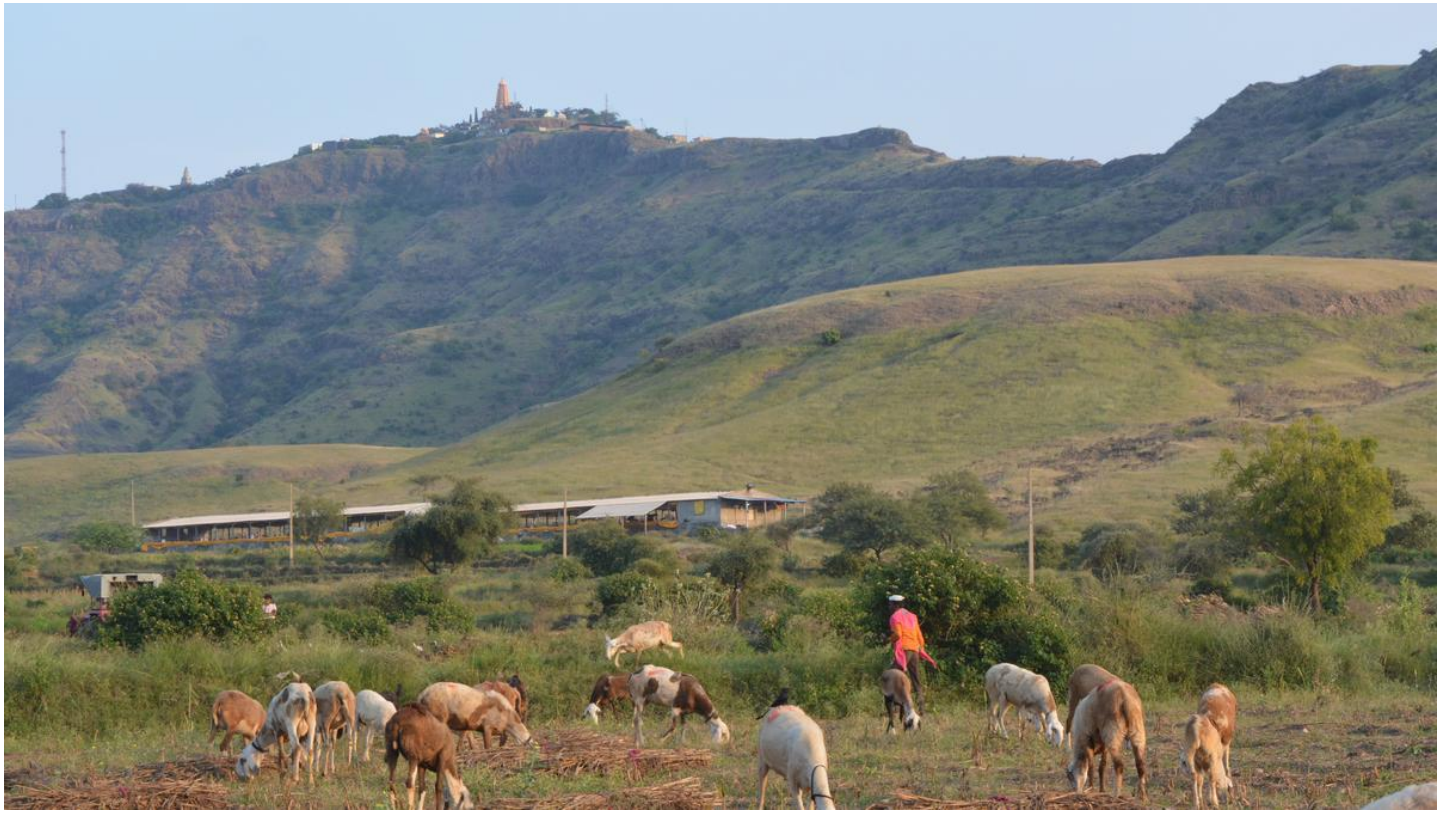
PURNIMA SAH



The sacred natural landscape at Shinganapur, which is described (and referred to as Kothaḷāgirī) in the Ādiparva, an early 16th-century CE Marathi narrative poem. | Photo Credit: Digvijay Patil

Savannas in western Maharashtra are far older than commonly believed and should not be treated as degraded forests, according to a study that mines medieval Marathi literature and living oral traditions to reconstruct the region's ecological history.

Published in the British Ecological Society journal People and Nature , the research shows open-canopy, tree–grass landscapes have persisted for at least 750 years, long before colonial timber extraction, and calls for conservation strategies that explicitly value local culture alongside biodiversity.

Led by Ashish N. Nerlekar from Michigan State University and Digvijay Patil from Indian Institute of Science Education and Research, Pune, the team reviewed 28 georeferenced excerpts from biographies, hagiographies, myths, narrative poems and ovī (verse–prose performances), dated from the 13th to the 20th century CE and set across Ahilyanagar, Pune, Satara, Solapur, Sangli and Nashik.

The texts repeatedly mention flora typical of savannas: hivara (Vachellia leucophloea), khaira (Senegalia catechu), taraṭī (Capparis divaricata), bābhūḷa (Vachellia nilotica), paḷasa (Butea monosperma) and grasses such as Pavanyā (Sehima nervosum), alongside descriptions of open, thorny landscapes with abundant grass and seasonal drought.

In all, the authors identified 62 plant species; 44 were wild, of which 27 were savanna indicators, 14 generalists and only three forest indicators, an overwhelming signal of open-canopy savannas in the past.

Mr. Nerlekar said, "It's fascinating that something hundreds of years old could so closely match what is around today and contrast so much with what people romanticize the past landscape to be." A prominent passage from the Ādiparva (16th century) describes cowherders settling near Baramati for grass and water from the Nira River, even as the land was "full of thorny trees." Founding myths of Shinganapur (Satara) and Vir (Pune) tie the sprouting of hivara or taraṭī trees to sacred omens, while dhanagarī-ovīs performed by Dhanagara pastoralists evoke "scrub jungles" and "terrifying forests" beyond settlements. Local idioms, the authors clarify, refer to savanna scrublands, not dense rainforests.

The study decodes historical terminology to avoid modern misreadings. In Marathi and Sanskrit, vana (forest) and jāṅgala (jungle) traditionally denote wild, unsettled tracts and

drier landscapes—grasslands, scrublands and savannas—contrasted with anūpa, the wetter marshes and closed-canopy forests. Ecologically, the authors distinguish two savanna types found in Maharashtra: fine-leaf savannas in drier zones (up to 1,000 mm annual rainfall) and broadleaf savannas in wetter zones (≥700 mm), with both co-occurring across the 700–1,000 mm band. Many species cited in the texts carry classic savanna adaptations: thick bark, spines, clonal growth and resprouting; traits shaped by frequent fire, browsing and grazing.

Crucially, the literary record is triangulated with 11 other lines of evidence, strengthening the case for antiquity. These include archival paintings and photographs that depict sparsely wooded uplands with continuous grass; colonial revenue records noting extensive pasture commons and hay meadows; hunting logs and bird lists dominated by savanna species; hero stones commemorating cattle raids in pastoral economies; Chalcolithic pottery bearing blackbuck motifs; faunal remains from grazers of dry and wet savannas; Holocene pollen showing long-term savanna expansion with a consistently grassy under storey; and dated phylogenies of savanna-endemic lizards and plants tracing diversification to arid phases over millions of years.

Together, these strands indicate climate, herbivory and fire, not wholesale deforestation, structured Maharashtra's savannas over deep time, with a mid-Holocene monsoon weakening driving a shift from wetter broadleaf to drier fine-leaf savannas.

Maharashtra's policy has a direct implication on these savannas. Today, open grassy expanses cover tens of thousands of square kilometres in the state; nationally, savannas and grasslands are often miscast as "wastelands" and targeted for afforestation under carbon-capture programmes. "These centuries-old stories provide us a rare glimpse into the past, and that the past was a savanna past, not a forested past," Mr. Nerlekar explained, warning that tree-planting in naturally open ecosystems risks biodiversity loss, compromised ecosystem services and pastoralist livelihoods.

A folio from an 18th-century manuscript, Bhaktavijaya, mentioning the taraṭī tree (Capparis divaricata; a savanna-indicator species). | Photo Credit: Kashi Jangamwadi Math Library

A central recommendation of the paper is to adopt a biocultural approach: conserve biodiversity with cultural heritage rather than apart from it.

The authors note that threats to biological and cultural diversity are often intertwined; commodification and homogenization can erode both agrobiodiversity and traditional

knowledge, and areas rich in cultural diversity frequently overlap with biodiversity hotspots.

In western Maharashtra, many savanna sites are sacred natural landscapes; plants such as hivara, taraṭī and taravaḍa feature in ritual practice and are tied to pastoral deities from Jejuri to Shinganapur and Vir.

Unlike the well-documented sacred groves of forest biomes in the Western Ghats, sacred savanna sites remain poorly recognized. Elevating these places within conservation planning, the authors argue, offers shared opportunities to protect both nature and culture.

The study also sets future directions like, documenting oral traditions before they erode; embedding savanna history in policy training and public awareness; and fostering interdisciplinary collaboration across ecology, conservation biology, religious and literary studies, and anthropology. Globally, the authors caution, similar misconceptions have driven tree plantations into ancient savannas in Africa, South America and Madagascar, with damaging consequences—an avoidable path for Maharashtra and India if restoration is tailored to natural savanna dynamics rather than an imagined forested past.

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