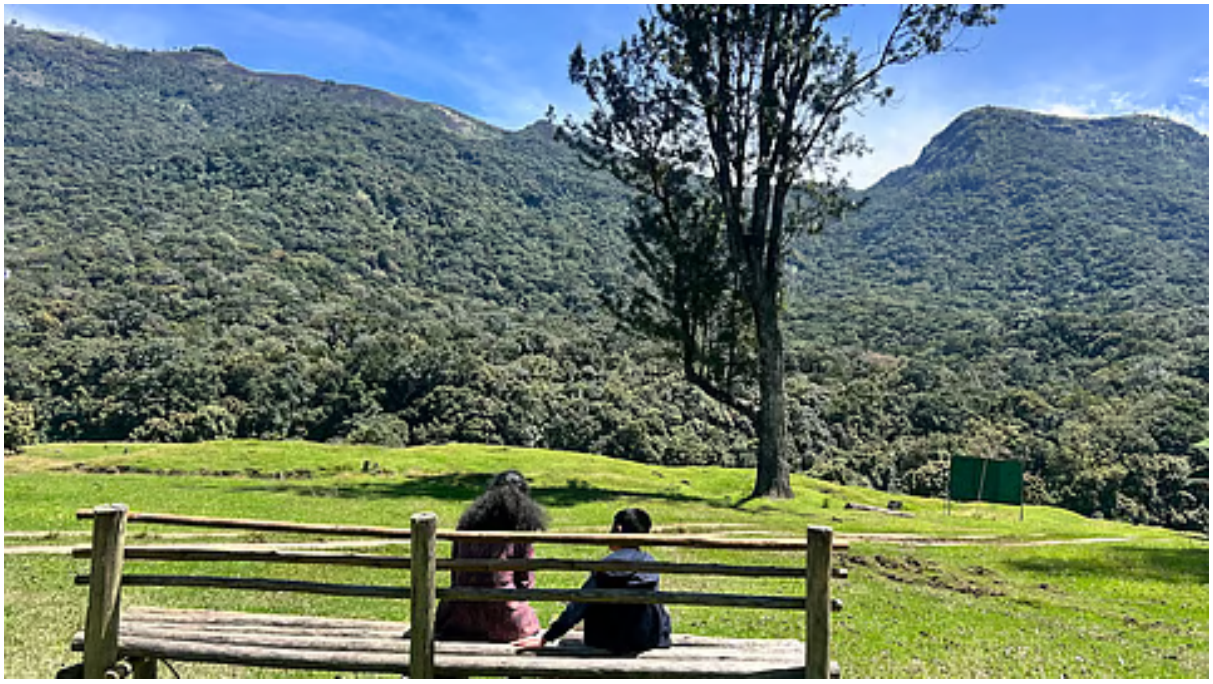
https://www.downtoearth.org.in/environment/how-pampadum-sholas-fight-against-wattle-invasion-is-reshaping-indias-restoration-story

Environment

How Pampadum Shola's fight against wattle invasion is reshaping India's restoration story

The success story holds lessons for similar ecosystems across the Nilgiris, Palanis and Anamalais as well as other countries



At elevations between 1,900 and 2,300 metres, Pampadum Shola is one of the world's oldest mountain systems, home to many distinct flora and fauna. KA Shaji

K A Shaji

Published on:
03 Nov 2025, 2:13 pm

Summary

- *In Kerala's Western Ghats, Pampadum Shola National Park is undergoing a remarkable transformation.*
- *Once dominated by invasive Australian wattles, the park's grasslands are being restored, reviving streams and native species.*
- *This ecological redemption highlights the importance of understanding ecosystems, as removing trees can sometimes be more beneficial than planting them.*

On a mist-wrapped morning, high in the chilly reaches of Kerala's Western Ghats, the slopes of Pampadum Shola National Park shimmer with a rare kind of green. Where, until a few years ago, walls of alien trees stood in dense ranks, there now stretch open meadows — low, wind-swept grasslands glinting with dew.

These are the newly liberated slopes of Pattiankal and Pazhathottam, once suffocated under Australian wattles, now breathing again. The air feels lighter, and the streams that had disappeared for decades have begun to trickle again. For those who know this high-altitude park — just over 1,300 hectares tucked into Idukki district's upper Devikulam taluk — this is more than scenery. It is ecological redemption.

Fragile jewel of the Ghats

At elevations between 1,900 and 2,300 metres, Pampadum Shola is the southernmost shola–grassland mosaic in the Western Ghats, one of the world's oldest mountain systems predating the Himalayas. In these folds evolved a distinct lineage of flora and fauna: the Nilgiri marten, Kerala laughing thrush, black-and-orange flycatcher, and a dozen orchids and tree ferns found nowhere else. The grasslands act as natural sponges, capturing and slowly releasing rainwater into the headstreams of the Pambar and Vaigai rivers that sustain Tamil Nadu's dry plains.

For local farmers in Vattavada and Koviloor, Pampadum is not wilderness but a watershed. The sholas temper their climate and feed their vegetable fields. "When the grasslands go, the water goes," said 65-year-old farmer Babykutty. "Now, after the forest people cleared the wattles, the stream near our farm flows even in March."

Curse of misplaced good intentions

The irony is painful: the wattles being uprooted today were once planted proudly by the same institution now leading their removal — the Kerala Forest Department. Introduced by the British in the early 1900s, *Acacia mearnsii* (black wattle) was prized for its tannin-rich bark, used in leather processing.

It thrived in the high, moist plateaus of the Western Ghats, spreading rapidly into wild landscapes. To colonial foresters, the native grasslands seemed barren "wastelands" waiting to be "improved" with trees.

Through the 1960s and 70s, forestry programmes filled the open meadows of the High Ranges with wattle, eucalyptus and pine — species that grew fast and looked green but quietly strangled everything else. Beneath their dark canopies, native grasses withered. The soil hardened and lost porosity; streams that once flowed year-round turned seasonal. Invasive shade suppressed herbs and wildflowers, displacing pollinators and grazing fauna. The grasslands — critical hydrological engines of the mountains — began to die.

By the 1990s, foresters realised the magnitude of the error. The “green” plantations were ecologically sterile, their roots choking the hillsides and depleting water tables. Yet few dared to speak against the orthodoxy of “tree-planting”. That began to change in Pampadum Shola.

Fire that sparked a rethink

In March 2015, a forest fire burnt through nearly 40 hectares of wattle-dominated slopes inside Pampadum Shola. “That fire was our turning point,” recalled G Prasad, then Wildlife Warden of Munnar, now Divisional Forest Officer (Timber). “We realised that if we simply let wattles recolonise, we would lose the last chance to restore the original grasslands. So we decided to un-plant our mistake.”

Between 2020 and 2024, the department, under Prasad’s guidance, cleared roughly 475 hectares of wattle across four key sites — Pattiankal, Pazhathottam, Thamburan Shola and Bandar. Workers manually uprooted stumps, used felled trunks as contour bunds to control erosion and sowed native grass seeds collected from nearby meadows.

In the newly exposed earth, the first shoots of *Chrysopogon* and *Eriochrysis* species reappeared. Gradually, open meadows began to reclaim their space.

Why removing trees can save a forest

The ecological reasoning behind this reversal is clear. The shola–grassland mosaic supports an extraordinary range of species, many of them found nowhere else. Under the dark, moisture-sapping canopy of wattle, these species vanished. Restoring grasslands reopens the ecological niches for pollinators, reptiles, small mammals and birds such as the Nilgiri pipit and the broad-tailed grassbird.

Grasslands are also critical to the hydrological balance. Their fibrous roots absorb rainfall, recharge aquifers and ensure steady base flow in streams. Under wattles, the soil compacted and rainfall simply ran off, eroding hillsides and drying springs. “The grasslands are true reservoirs,” explained Dr KV Sankaran, former director of the Kerala Forest Research Institute. “They hold the water that sustains both sholas and human settlements.”

Early monitoring of cleared Pampadum plots confirms the science: Soil moisture has improved, infiltration rates are higher and sightings of Nilgiri martens and small herbivores have increased. Springs that had vanished decades ago now bubble again.

Policy shift: From plantations to restoration

This ecological awakening gained institutional muscle in 2021, when Kerala adopted the State Eco-Restoration Policy. Exotic plantations were formally identified as ecological threats, and the removal of invasive species — especially wattle and eucalyptus — from high-altitude ecosystems became a state priority. “For generations, forestry meant greening — any greening,” said MJ Babu, a Munnar-based conservation activist. “Now the directive is different: Green smart, not green blind.”

The project’s phased restoration plan now covers 475 hectares cleared, with another 600 hectares in the pipeline. The model is being studied for replication in other high-altitude protected areas like Eravikulam, Mathikettan Shola and Silent Valley.

Grassland restoration is slow and painstaking. “You cannot simply cut trees and walk away,” said field supervisor Devassy from Koviloor. “The roots sprout again unless you dig them out. Sometimes we go back three or four times.”

Local youth, many from eco-development committees, have been trained in restoration techniques — root stumping, contour bunding, grass seeding, erosion control. Wattle logs are stacked along slopes to check soil runoff; collected grass seeds are mixed with topsoil and manually sown before the monsoon.

“When I started, I didn’t understand why we were planting wild grasses instead of trees,” said Meena, a restoration worker. “Now I see butterflies returning, and a stream near our camp flowing again. We are bringing the hills back to life.”

Wattle roots are persistent; without continuous follow-up, they resprout within months. Funding gaps could delay the next phase. “We need long-term monitoring of hydrology, species return and soil health. Otherwise, the system may revert,” said Anitha K, ecologist at Mahatma Gandhi University.

From local hills to global relevance

What Pampadum is doing resonates far beyond Kerala. Black wattle is listed among the world’s 100 worst invasive alien species. Its removal is a conservation priority from South Africa to Brazil. Yet few places have attempted systematic, large-scale restoration of invaded grasslands. Kerala’s effort is thus being closely watched as a potential model for tropical montane restoration worldwide.

At the recent Western Ghats Ecology Experts’ Conclave, scientists hailed Pampadum as “India’s first living laboratory for de-plantation ecology”. The project’s combination of manual clearance, community participation and natural regeneration, without heavy mechanisation or chemical treatment, offers lessons for similar ecosystems across the Nilgiris, Palanis and Anamalais.

@Shaji K A
What were the traditional and customary usage of these grasslands by which communities, if any? How were they affected by the transition to wattle if at all? Have these communities claimed these grasslands under the Forest Rights Act? If so, what is the status? Will the transitioning back to grass lands include the transfer of access and use to those communities, of any, that sustained the grasslands in the past?

👆 my questions to the author

The high-altitude grasslands of Pampadum Shola were once integral to the lives of the Muthuvan and Mannan tribal communities, who sustained them through small-scale shifting cultivation, seasonal grazing, and the careful use of fire to regenerate native pasture. These practices were both ecological and cultural, helping maintain the open meadows that supported biodiversity and traditional livelihoods alike. But this balance was ruptured when the forest department, first under colonial regimes and later through post-Independence afforestation drives, converted vast stretches of these grasslands into wattle and eucalyptus plantations. The move fenced off the tribes from their ancestral commons, eroding their livelihoods and ecological knowledge. Though the Forest Rights Act (FRA) was meant to correct such historical injustices, Kerala’s record of implementation remains dismal. Across Idukki and other high-range districts, community forest resource claims by Muthuvans and Mannans have languished for years, mired in bureaucratic resistance and a forest administration that still views tribal stewardship as a threat rather than a partnership. Even as the state now undertakes efforts to restore grasslands by removing exotic species, the process has remained technocratic — focused on vegetation change rather than rights restitution. Unless the ecological transition is matched by the transfer of access and management rights to the communities that once sustained these ecosystems, Pampadum Shola’s restoration will remain incomplete — yet another instance of Kerala’s selective commitment to both forest conservation and social justice.

👆 the author's reply