

India's Sacred Groves Are Resurrecting a Vanishing Forest

Botanists and community stewards are using patches of native flora as blueprints to revive tropical dry evergreen ecosystems from near-extinction.



Throughout India, sacred groves are patches of forests of varying sizes that are usually overseen by local communities. Today, some intact fragments of these forests are biodiversity hotspots. PHOTOGRAPH: DINODIA PHOTOS/ALAMY

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When Sathyamurthy N. was young, his family and fellow villagers from Edayanchavadi, Tamil Nadu, India, would embark a few times a year on a 15-kilometer-long journey to a sacred forest in Keezhputhupattu.

Nostalgia grips the 43-year-old Sathyamurthy as he remembers those trips: food wrapped in cloth and leaves, the elderly riding on bullock carts, and excited children on foot making a beeline eastward in the predawn darkness. The pilgrims, sweating in the morning heat and humidity, would look forward to the cool shade of the forest at the end of their journey. There, densely packed trees meant that the sun barely touched the terracotta soil. These sacred groves are of religious significance to some Hindu groups and include temples dedicated to clan deities revered as protectors of family lineages. This grove, just 1 kilometer shy of the Bay of Bengal, is home to Lord Manjaneeswarar Ayyanar, Sathyamurthy's clan deity.

Today, the days-long pilgrimages on foot are just a memory for Sathyamurthy. Things have changed in the forest too. The 9-hectare sacred grove—about the size of nine soccer fields—has a barbed wire fence around it, a tarmac road allowing people to drive to the temple's doorstep, and a public toilet. But parts of the grove have survived these transformations and preserve a rare ecosystem on the rapidly urbanizing coast. Sathyamurthy offers a quick prayer at the temple, then leads me into a dense thicket of ironwood, ebony, and axlewood. Lianas and creeping vines fill the spaces between the thick trunks and twisted branches; it's hard to tell where one plant ends and another begins. It's like the sacred grove is closing ranks, but persistent devotees infiltrate the forest in search of small shrines or medicinal plants. Occasional chants, chatter, and the tinkle of brass bells are interspersed with the calls of mynas.

When Sathyamurthy was growing up, he and his fellow villagers called the grove the *kovil kaadugal* (temple forest), but after he started working at Auroville Botanical Gardens, an arboretum in Tamil Nadu, in 2007, he learned that this forest was part of a threatened ecosystem called the tropical dry evergreen forest.

This forest type is within 30 to 50 kilometers of the Coromandel Coast and can withstand the long, humid, and hot (sometimes over 100 °F) summers and the deluge of up to 2 meters of rain during the monsoons.

These forests once covered 400 to 500 kilometers of the Coromandel Coast. But as ancient seafaring Tamil and Telugu kingdoms, European colonizers, and modern-day Indians built cities and ports along the coast, the forests vanished. Today, most of this belt has been replaced by development around the approximately 700-kilometer-long East Coast Road that runs from Tamil Nadu's capital, Chennai, to Ramanathapuram and beyond. It's also home to almost 34 million people.

While studies in the 1960s and 1980s found that this native forest type was in decline, some tracts remain in around 75 sacred groves near coastal villages, and they could be the key to restoring ecological balance to a vanishing ecosystem.

BOTANIST PAUL BLANCHFLOWER, director of the Auroville Botanical Gardens, and forester Glenn Baldwin, a project coordinator at the Auroville Forest Group, are two vocal advocates of the tropical dry evergreen forests. They first heard about these forests while working and living in Auroville, an experimental township started in 1968 by spiritual guru Mirra Alfassa and named for Sri Aurobindo.

When the land for Auroville was granted, it was a barren 50-meter-high plateau with deep gorges. During monsoons, the eroded topsoil would bleed into the Bay of Bengal. The first order of business for the new inhabitants—5,000 people from 124 countries—was to make the Martianesque landscape habitable. Over decades, a motley crew of foresters, ecologists, and conservationists worked on afforestation, soil restoration, and water conservation projects within Auroville. To restore the forest, they planted several drought-resistant foreign species such as acacia from Australia and ironwood from Brazil.

While the trees took hold, Auroville residents, including Blanchflower and Baldwin, grew curious about how the indigenous forest that once flourished on the site must have looked. So, starting 25 years ago, a large team of Auroville-based foresters and botanists began exploring sacred groves, like the one in Keezhpathupattu, just 15 kilometers from Auroville. With the help of locals and armed with a field guide to regional flora, they scoured the coast and identified 85 patches of tropical dry evergreen forest in sacred groves, government-protected forest reserves, and graveyards. It's remarkable that they found any. Based on work they've done to date, Baldwin says only about 0.05 percent of this original forest type remains. Many have argued that there isn't any tropical dry evergreen forest left at all, he says, "but we beg to differ."

Trees planted in the early days of Auroville were largely unsuited for the cyclone-prone tropical coast and tended to snap like twigs during high winds, very unlike the sturdy trees and dense forests in the sacred groves.

The native forest offers refuge to bees and other pollinators year-round as its myriad plant species bloom in different seasons, says Blanchflower. They are also a haven for fauna such as red-whiskered bulbuls, mynas, golden jackals, and Indian civets.

What the Auroville team learned about the tropical dry evergreen forests became a blueprint for reforestation programs in the community. The team mapped the tropical dry evergreen forest sites they'd located and documented their biodiversity, then collected seeds and started nurseries all with an eye to restoring the Auroville forest. By 2000, around 45 forests managed by community members in Auroville were propagating close to 200 tropical dry evergreen forest species in their nurseries.

Tree by tree, Auroville's forest composition started to change, particularly after cyclones destroyed the older foreign species, opening up space for indigenous trees. In 2015–2016, for instance, five years after a major cyclone tore down the forest canopy, Auroville residents planted 15,000 saplings, of which 90 percent were native species.

Today, community-run nurseries supply around 50,000 saplings a year for tree-planting projects in Auroville, and small “forest groups” of local residents plant native species across the almost 500 hectares of green space that includes community-owned and collectively managed forests. The groups have planted more than half a million evergreen saplings of over 200 species.

Ancolie Stoll tends to one such space called Nilatangam, a 7.5-hectare afforestation project started by her European parents when Auroville was first set up.

Nilatangam has tall trees from different parts of the world but few indigenous varieties. It isn't dense and complex like the forests of the sacred groves. Instead, the trees are neatly spaced, like crops on farmland, with walking paths and plenty of room for plants to naturally reseed.

Stoll works with Blanchflower and Baldwin at the botanical garden and says that, at Nilatangam, she has recently planted more native species belonging to the tropical dry evergreen type. In between the canopy of nonnative trees from her parents' time, she points to patches where she's planted such saplings.

Over time, she will plant even more, when there are new species available, she explains. The process is slow, but she hopes to create a proper tropical dry evergreen forest within several years.

Tropical dry evergreen trees dominate the 20-hectare Pitchandikulam Forest and Bioresource Centre and the similarly sized Auroville Botanical Gardens. Baldwin,

Blanchflower, and their botanical garden team are working to map the extent and variety of native species within Auroville.

Education is a key goal of the botanical gardens, and this is where Sathyamurthy plays an important role. During field trips to Auroville's forests and at the sacred groves, he teaches students about the forests' ecological importance and cultural heritage.

I get a sense of what the students might experience when Sathyamurthy guides me through Keezhputhupattu just after the bountiful rains of the November 2021 monsoons. The scent of wet soil mingles with incense sticks and jasmine garlands as we pass by shrines and flower vendors. Inside the forest, we walk through ankle-deep, doughlike red soil; around us stand stout trees, two to three stories high. Sathyamurthy continues unperturbed, leaving behind footprints from his rubber sandals.

He occasionally stops to enlighten me in Tamil, with a smattering of English, about the medicinal or cultural uses of some of the plants. He shares their scientific names and the Tamil equivalents in rapid succession. An ironwood tree, called *kaasan* in Tamil, is of particular medicinal value. Women crush the leaves with rice and consume the mixture as an immunity booster for postpartum recovery, he says. The tropical ebony, called *karungaali*, is used for making musical and agricultural instruments. Its much sought-after twigs are hung on doorways to ward off evil energies. We stop frequently—it seems like Sathyamurthy has a story for every plant, and he hopes his enthusiasm will inspire the students he takes to the forest.

Sathyamurthy feels that students will give sacred groves a chance in their villages. He believes such visits help in forging a relationship between the trees and the students. The students leave the field trips with seeds, saplings, and tips on how to plant native trees on common lands in their own villages.

Educating the next generation on the value of these forests could be the key to their survival, for despite their temples and importance to religious groups, the sacred groves aren't spared from threats of urbanization, including extraction for biomedical and cultural uses.

Keezhputhupattu, for instance, receives hundreds of thousands of devotees every year, and villagers find it hard to control outsiders' interactions with the forest. Tourists and herders trespass too.

Outside the grove, Sathyamurthy spots three young men yanking at a tree. They manage to get hold of a large branch. After a protracted tug of war, they tear one limb off the tree. The

leaves fall with a loud, exhausted rustle. The men merrily drag away their spoils, presumably to be used for medicinal or cultural purposes.

Sathyamurthy shakes his head in disapproval and says there's an urgent need to address the threat to the groves. Later, he tells me that a loss of the sacred groves feels like an attack on his community's way of life.

This is why seed collection, nurseries, tree-planting drives, and awareness about the tropical dry evergreen forests are essential. If everything's extracted, there's no chance for the forest to regenerate and "build the bank balance," Blanchflower points out. Re-creating the natural forest "puts energy back in the bank."

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