

# Miyawaki Nature Lab in Thiruvananthapuram lets visitors realise how micro-forests transform soil and environment » Jungle Tak

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## Miyawaki Nature Lab in Thiruvananthapuram



As we stroll under a canopy of lush vegetation, droplets glisten on the leaves. You can hear the sound of the Karamana River 750 metres below during full flood. The scent of soil, leaves, spices and flowers fills the air. We bump into branches, leaves and vines as we walk through this tropical paradise.

A big brown centipede crawls eagerly, a green frog leaps under a stone



MR Hari at the Miyawaki Nature Lab at Puliyaarakonam,  
Thiruvananthapuram- JUNGLE TAK

When MR Hari, CEO of Invis Multimedia, sold his ancestral property in 2007, he invested it in a two-acre hilly plot near Puliyaarakonam, about 15 km from Thiruvananthapuram; it was once planted with acacia trees. The monsoon had eroded the topsoil of the area and planting trees did not help prevent water from draining away from the hill.

Hari remembers planting 500 saplings every year, but they dried up because the rocky and pebbly red soil did not hold water. On the other hand, blasting in the quarry causes vibrations that affect the water level in the area, he says.

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plants, and butterflies flit among the Ixora, enjoying a little sunshine. Gayathri Nair, my tour guide for the day, shows me the range of plants that have turned this once-dry hillside green in just six years while I was visiting the Miyawaki Nature Lab. She adds that what little water remained inside had disappeared through tiny cracks in the rocky substrate caused by blasting.





Initially, place at Puliyaakonam was filled with pebbly, red soil that could not hold water and most of the plants withered away- JUNGLE TAK

To find out if the field could be fertilised with organic manure, Hari started raising cows and chickens. It was clear he didn't want to use pesticides.



Japanese botanist Akira Miyawaki invented the Miyawaki planting technique, which was introduced to Hari in 2015. He has dedicated his entire life to growing natural plants on degraded land in order to restore it.

Thus, on a small plot of land at his home, Hari began experimenting with the Miyawaki model in 2017. Dr. Mathew Dan, a soil scientist; Cherian Mathew, an agricultural journalist; and Madhu, Hari's farm assistant, all assisted him.



The replenished soil at Miyawaki Nature Lab, Thiruvananthapuram- JUNGLE TAK



The plants were first grown in bags of soil until they reached a height of about two feet and began to form roots, rather than being immediately transplanted into the ground. They were buried in the ground. In addition, Hari says, “We installed drip irrigation, wire mesh to support the trees, and a green shade to protect the young plants from direct sunlight during summer.”

In 2019, Hari, who was then in his eighties, went to Japan to talk to Miyawaki after seeing the difference in the growth of the plants. I contacted his group. They came to Kerala and advised me about the planting method advocated by Miyawaki. They knew that implementing the model on their entire plot would be extremely expensive.



MR Hari with Akira Miyawaki.- JUNGLE TAK

Instead, four saplings were planted in one square metre area, with small plots selected and heavily planted in them. “While Miyawaki suggested only three, we tested four, and it was effective. This process allows us to regenerate the soil.

According to Miyawaki, pests are nurtured by forests as a self-defense mechanism and to attract predators that eat pests. Insect feces, bird feces, leaves, etc. all improve the soil. I have photographed about 500 different species of insects in the park,” says Hari.





Miyawaki Nature Lab- JUNGLE JAK

He drilled holes in rocks and planted saplings to test their ability to take root. The thriving plants gave Hari confidence that abandoned quarries could similarly be transformed into micro-forests that serve as green lungs of neighbourhoods.

Hari has also set up a tank for fish farming in the same area. He was able to replicate this idea on some private plots in Kerala and assisted them in planting forests emphasizing local blooming plants, herbs and trees with medicinal properties. Additionally, under the



direction of the Kerala Development and Innovation Strategic Council, 10 Miyawaki forests were planted in various Kerala environments. These included residential areas, coastal areas and urban micro forests.



A frog at the Miyawaki Nature Lab in Thiruvananthapuram- JUNGLE TAK

The Miyawaki model states that there is a natural ecosystem and the soil and environment can be progressively improved by planting greenery that attracts native species of birds and insects.

For example, we will not be able to attract birds and insects – including moths – that can eat the larvae of butterflies, unless we have plants that attract them. Gayatri claims that the entire ecology gets disturbed when we set up monocultures.

According to Hari, these urban micro-forests can effectively mitigate the effects of climate change, prevent waterlogging, reduce temperatures and re-introduce nature into urban forests.



Miyawaki forest at Munakkal beach, Alappuzha- JUNGLE TAK

“I refer to this place as a nature laboratory because it provides a wonderful opportunity for students and environmental enthusiasts to see how soil changes.

I am going to conduct a five-day practical training course which will demonstrate how soil is biologically drained and then regenerated by plants growing there.

Furthermore, once the forests and roots are there to hold the soil together, the groundwater is replenished.

Students from Karnataka and Kerala have come in large numbers to check out the transformation of this desolate area.

Understanding that there are staunch opponents of the Miyawaki approach, Hari traveled to Japan to observe the growth of forests that were about fifty years old. He claims that he was astonished at the way the forest not only survived but thrived and had an impact on the surrounding area.





Miyawaki fruit forest at Kanakkary, near Ettumanoor, in Kottayam district- JUNGLE TAK

Hari was selected to work as a consultant for the United Nations Convention to Combat Desertification. “I am a member of an international effort to set up Miyawaki forests in one million schools. We are working to set up similar micro forests in Rajasthan, Orissa and Maharashtra. We have also set up one on the grounds of the Koodankulam nuclear power plant in Tamil Nadu,” he adds.

Kerala already has 150-200 such forests. He believes that urban groundwater can be replenished if citizens plant one to two cents of forests on their properties. He claims that Miyawaki forests using native plants can aid in the restoration of rivers and conservation of coastal areas.

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[Roshan Khamarihttp://jungletak.in](http://jungletak.in)

Biographical Information - Roshan Khamari Name: Roshan Khamari Date of Birth: February 12, 2002 Place of Birth: Kalahandi District, Odisha, India Roshan Khamari is a dynamic and visionary individual with a passion for nature, wildlife, and journalism. Born on February 12, 2002, in the scenic landscapes of Kalahandi district in Odisha, India, Roshan's upbringing in the midst of lush forests and vibrant wildlife fostered a deep connection with the natural world from a young age. Driven by his love for nature and wildlife conservation, Roshan embarked on a dual educational journey, pursuing both a BA in Journalism and Mass Communication and a BSc in Forestry, Wildlife, and



Environmental Science simultaneously. This unique combination reflects his commitment to raising awareness about environmental issues and using journalism as a powerful tool to amplify nature's voice. As a young and enthusiastic advocate for the environment, Roshan's passion led him to found Jungle Tak, India's first forest-based news platform. Through Jungle Tak, Roshan endeavors to bring people closer to the wonders of the wild, inspiring a deeper appreciation for nature's beauty and fostering a sense of responsibility towards conservation. With an academic background in journalism and forestry, wildlife, and environmental science, Roshan strives to use his knowledge and platform to educate, engage, and empower others in the realm of nature and wildlife conservation. As he continues on his journey to make a positive impact on the environment, Roshan's dedication, vision, and unwavering commitment to preserving the beauty of our planet's wilderness serve as an inspiration to all. Biographical Information updated as of August2023