



Volunteers plant mini-forests in Paris to slow climate change, tackle heatwaves

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On a damp Saturday afternoon in a southern suburb of Paris, a young boy of 9 wields a spade to plant a sapling on an abandoned strip of land.

He isn't that much taller than the young tree he is planting. The afternoon rain has churned the ground beneath him into mud. He casts his spade aside and clears the clay earth with his hands.

Along with his proud grandmother, and his fellow volunteers, he's immersed in planting a mini-forest, also known as a pocket forest, besides a busy motorway in the neighbourhood of Chevilly-Larue, 9.3 kilometres south of central Paris.

French non-profit Boomforest has organised a tree-planting initiative, drawing a dozen volunteers of all ages, clad in beanies and boots as they brave the cold and rain.

Grazia Valla, 79, a former journalist, said she "jumped at the chance to do something concrete" about climate change and show her grandson how to plant trees.

"He loves going to the community vegetable garden," she said, casting an affectionate look in his direction. "Whenever I look after him, he's always clamouring to go there."

"Not every child has the chance to see how vegetables grow and taste them," she said, applauding the initiative. "We are very interested in everything to do with nature."

Maxim Timothée, 31, was happy to be outdoors and was motivated by the simple, symbolic act of planting a tree.

"It does feel really special to plant a tree," he said, taking a brief pause from cutting into the damp clay.

"It's not just an object. I feel connected to the life of this tree. I want to protect it. I planted it."

Despite the drab weather, Timothée said it felt good to be taking action, rather than just sitting at home ruminating on the problems of climate change and the sharp decline in biodiversity.

The Miyawaki method

Mini-forests were first developed in the 1970s by the Japanese botanist Akira Miyawaki, who studied the relics of centuries-old forests growing around sacred temples and shrines.

Miyawaki found they were not only thriving without human intervention – they were richer and more resilient than more recently planted forests.

In his study of ancient primary forests, Miyawaki claimed that densely planted indigenous species, grown in carefully prepared soil at four different heights to provide multiple layers of coverage, grew up to 10 times faster and captured more carbon than standard managed forests.

Miyawaki went on to monitor the planting of more than 1,500 forests worldwide, claiming that a forest as small as 100 square metres could be home to exceptional levels of biodiversity.

Advocates of Miyawaki forests have adapted his methods and transported them around the world as cities look to curb the effects of climate change, restore degraded land, create biodiversity hotspots and sequester greater amounts of carbon.

Forests the size of tennis courts have been planted in Beirut, in cities in Asia, all over India, and increasingly through Europe.

Paris planted its first mini-forest on the northern edge of the city ringroad at the Porte de Montreuil in March 2018 with Boomforest's grant from the French capital's participatory budget.

"Ninety-five percent of the trees planted there have survived," says Guillaume Dozier, 33, a regular Boomforest volunteer, as he carried compost in a wheelbarrow to mulch the soil around the newly planted saplings.

"The trees have now grown to a height of nearly four to five metres," he reports with delight, adding that biodiversity in the mini-forest is now thriving.

“Every time we go there we notice more and more insects and birds that weren’t there before,” Dozier says, explaining that they were setting up a programme to monitor the species gathering there.

Motorways are “an extremely hostile environment” for birds and insects, says Dozier over the roar of traffic, explaining that Val de Marne authorities had given them the land by the side of the road to plant the new forest.

By recreating the same richness and density of a wild forest, the new trees will provide shelter for hundreds of small mammals, insects and birds, Dozier continues.

Unlike artificial forests planted for timber production, where the trees are laid out in neat lines and planted 10 metres apart, trees in Miyawaki forests are planted closely together.

As many as three trees per square metre were being planted at random by the side of the motorway, with the slender young saplings clustered closely together.

Planting a single tree has been shown to have the same cooling effect as 10 air conditioners. But trees are social and fare much better when planted in the company of fellow trees, explains Dozier.

“They’ll give each other shade, and they’ll be able to exchange water, nutrients and information. If one of them is under attack, they’ll be able to warn the others. For example, they’ll make their leaves bitter to make them less edible for the attacker,” he says.

All of the saplings are local French species. By local, the City of Paris defines French indigenous plants as those in the region before AD 1500, Hannah Lewis explains in her book, “Mini-Forest Revolution: Using the Miyawaki method to rewild the world”. But the Boomforest team carried out additional research to ensure their trees and shrubs were the most locally adapted species, and would cohabit well.

Oaks, ashes, beeches and willows are planted in the centre, while shrubs such as hazel, holly and charcoal are planted around the edges. Just 15 different species of plants were planted that weekend but as many as 31 local trees and shrubs have been planted at Boomforest’s other projects.

Pocket forests in Paris

Proponents of pocket forests also hope they can make a city as dense as Paris more habitable in the heat.

In the summer of 2022, Paris sweltered in three successive heatwaves over a total of 33 days, and temperatures in the French capital hit near-record highs of 40 degrees Celsius.

The lack of trees, and the shade and quiet they provide – Paris has about 9% tree coverage – was conspicuous as the city became a furnace.

Parisians wilted in the city’s paved streets as the asphalt, concrete and metal from buildings soaked up the baking heat and beamed it back out again.

Paris City Hall has vowed to plant 170,000 trees in the French capital by 2026. But their felling of 76 ancient plane trees in April last year, to make way for garden spaces, sparked the wrath of environmentalists including Aux Arbres Citoyens and the GNSA, groups that fight against tree felling.

Green activists also say that newly planted saplings are no competition for the cover provided by a decades-old tree, and that young trees are particularly vulnerable to drought.

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