WELLBEING • MINDFULNESS • CREATIVITY • ESCAPE

# Breathe

*and make time for yourself*

ISSUE 36 £3.99

Coastal cool ***Courage of conviction*** Ahead of the curve ***The joy of newness*** Find your aural compass ***Garden of the mind*** High bar ***After the storm*** Once in a lifetime ***Manifestly for you*** Art of darkness

# From tiny forests

*Why the Miyawaki method is gaining ground in the fight against climate change*

Forests are vital for the natural world and the existence of all life on Earth. According to global conservation organisation WWF, we depend on them 'for our survival, from the air we breathe to the wood we use. Besides providing habitats for animals and livelihoods for humans, forests also offer watershed protection, prevent soil erosion and mitigate climate change'. And yet a major cause of the latter is the alarming rate of disappearance of these carbon sinks. Experts estimate that the equivalent of around 36 American-football fields of trees are lost every minute because of deforestation – a figure that is both startling and unprecedented.

That's why afforestation – planting new saplings where none existed before – and reforestation – replanting trees where they once grew but have been destroyed – are so important to the fight against climate change. While environmentalists are constantly thinking up new ways to approach the issue, one idea is experiencing a resurgence: the Miyawaki method.

This particular afforestation technique is named after Japanese botanist Akira Miyawaki, who, in the 1970s, found a way to recreate ancient woodland that could grow quickly and would require just a small patch of land. Using native plant species, his method involved planting saplings very closely together in nutrient-rich soil to create a dense mini-forest.

But what is it about this that encourages such rapid growth? Victor Beumer, senior research lead at environmental charity Earthwatch Europe, explains: 'Part of the methodology for making the trees grow faster is the dense planting. This makes the saplings compete with one another for resources – light, space, water and nutrients – and hence grow quicker.

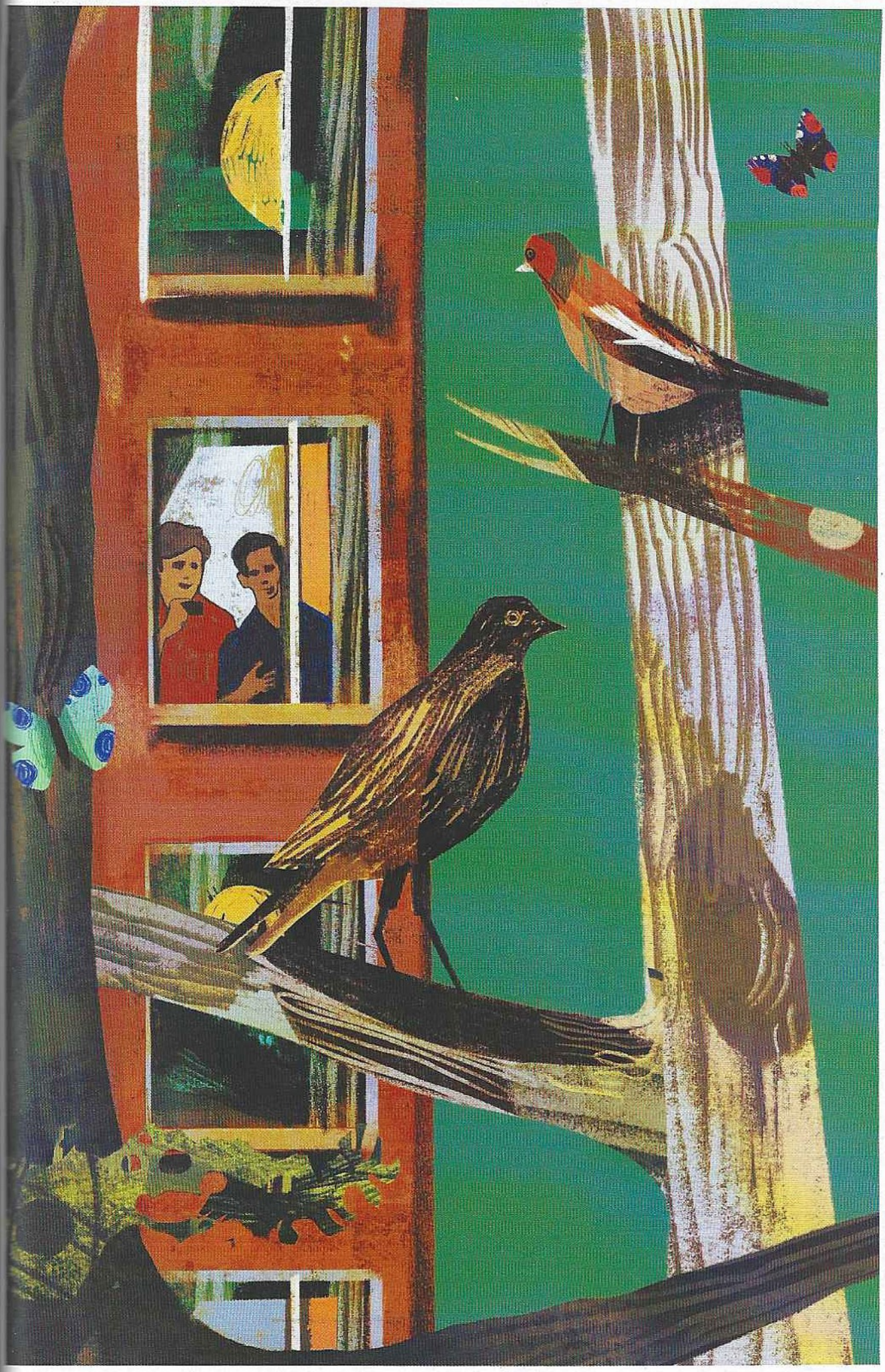
And space is not the only factor at play – as the densely packed plants fight for the limited resources available, over time 'there will be some natural mortality, with the strongest individuals reaching maturity'. Victor says: 'This is why the combination of species planted is important – there has to be an even distribution of trees from all the forest layers, so that each can occupy a different niche.'

As the climate crisis becomes more apparent, the need to deliver impactful solutions with speed is critical. Usually to plant and nurture a new forest from scratch, it would take several decades for the trees to reach maturity. With this method, the growth rate is up to 10 times faster. Couple this with the fact that you need only a small bit of land – as little as 100m² – and it's easy to see why the technique is so appealing, especially in urban spaces.

According to Victor, more than 3,000 of these forests already exist around the world, a number that's increasing significantly as awareness grows. At Earthwatch Europe, the goal is to plant at least 150 more in the UK by 2023. Meanwhile, its partner organisation based in the Netherlands, IVN Nature Education, has planted nearly 100, having established Europe's first in 2015. For this initial project, IVN used the guidance and support of Shubhendu Sharma, an industrial engineer turned entrepreneur who revived the Miyawaki technique and began the Tiny Forest movement in 2009.

It was at car manufacturer Toyota's factory in Bengaluru (formerly Bangalore), India, that Shubhendu met Miyawaki, who had been commissioned to plant a forest there. After joining the botanist's team of volunteers, Shubhendu was so inspired that he left his job at Toyota to establish a start-up social enterprise, aptly named Afforestt. In his 2014 Ted Talk, Shubhendu explained what his motivation was behind this career change: 'I wanted to make more of these forests. I was so moved by the results that I wanted to use the same acumen with which we make cars or write software or do any mainstream business, so I founded a company which is an end-to-end service provider to create these native natural forests.'

Since its inception in 2011, Afforestt has helped international partners like IVN establish these diverse, green pockets around the world. As well as the Netherlands and the UK, mini-forests can be found in Singapore, Iran and Nicaragua, not to mention across the Indian subcontinent, in locations such as Delhi, Lahore and Rajasthan. The movement is well and truly making



# From tiny forests

*Why the Miyawaki method is gaining ground in the fight against climate change*

Forests are vital for the natural world and the existence of all life on Earth. According to global conservation organisation WWF, we depend on them 'for our survival, from the air we breathe to the wood we use. Besides providing habitats for animals and livelihoods for humans, forests also offer watershed protection, prevent soil erosion and mitigate climate change'. And yet a major cause of the latter is the alarming rate of disappearance of these carbon sinks. Experts estimate that the equivalent of around 36 American-football fields of trees are lost every minute because of deforestation – a figure that is both startling and unprecedented.

That's why afforestation – planting new saplings where none existed before – and reforestation – replanting trees where they once grew but have been destroyed – are so important to the fight against climate change. While environmentalists are constantly thinking up new ways to approach the issue, one idea is experiencing a resurgence: the Miyawaki method.

This particular afforestation technique is named after Japanese botanist Akira Miyawaki, who, in the 1970s, found a way to recreate ancient woodland that could grow quickly and would require just a small patch of land. Using native plant species, his method involved planting saplings very closely together in nutrient-rich soil to create a dense mini-forest.

But what is it about this that encourages such rapid growth? Victor Beumer, senior research lead at environmental charity Earthwatch Europe, explains: 'Part of the methodology for making the trees grow faster is the dense planting. This makes the saplings compete with one another for resources – light, space, water and nutrients – and hence grow quicker.

And space is not the only factor at play – as the densely packed plants fight for the limited resources available, over time 'there will be some natural mortality, with the strongest individuals reaching maturity'. Victor says: 'This is why the combination of species planted is important – there has to be an even distribution of trees from all the forest layers, so that each can occupy a different niche.'

As the climate crisis becomes more apparent, the need to deliver impactful solutions with speed is critical. Usually to plant and nurture a new forest from scratch, it would take several decades for the trees to reach maturity. With this method, the growth rate is up to 10 times faster. Couple this with the fact that you need only a small bit of land – as little as 100m² – and it's easy to see why the technique is so appealing, especially in urban spaces.

According to Victor, more than 3,000 of these forests already exist around the world, a number that's increasing significantly as awareness grows. At Earthwatch Europe, the goal is to plant at least 150 more in the UK by 2023. Meanwhile, its partner organisation based in the Netherlands, IVN Nature Education, has planted nearly 100, having established Europe's first in 2015. For this initial project, IVN used the guidance and support of Shubhendu Sharma, an industrial engineer turned entrepreneur who revived the Miyawaki technique and began the Tiny Forest movement in 2009.

It was at car manufacturer Toyota's factory in Bengaluru (formerly Bangalore), India, that Shubhendu met Miyawaki, who had been commissioned to plant a forest there. After joining the botanist's team of volunteers, Shubhendu was so inspired that he left his job at Toyota to establish a start-up social enterprise, aptly named Afforestt. In his 2014 Ted Talk, Shubhendu explained what his motivation was behind this career change: 'I wanted to make more of these forests. I was so moved by the results that I wanted to use the same acumen with which we make cars or write software or do any mainstream business, so I founded a company which is an end-to-end service provider to create these native natural forests.'

Since its inception in 2011, Afforestt has helped international partners like IVN establish these diverse, green pockets around the world. As well as the Netherlands and the UK, mini-forests can be found in Singapore, Iran and Nicaragua, not to mention across the Indian subcontinent, in locations such as Delhi, Lahore and Rajasthan. The movement is well and truly making

## HOW DO YOU CREATE A MIYAWAKI FOREST?

*Here are a few of the basic principles. You could find a local environmental organisation and start a conversation about planting a mini-forest in your community.*

- **Find an appropriate space**. 'The surface area should be at least 100m²,' says Nicolas, 'with no underground networks such as water, electricity and phone lines. It also needs to be no less than 5m from the nearest infrastructure so that the mature forest will not become a problem.'

- **Prepare the soil**. According to Earthwatch, adding natural, local materials, water retainers and perforators will encourage the saplings to establish quickly. Organic fertilisers will also provide nourishment.

- **Use native species**. It's recommended to have at least 30 different varieties to increase biodiversity and help mimic a natural forest.

- **Plant densely in layers**. The different saplings need to be close together – three to five per square metre is ideal. Plant as randomly as possible and avoid placing the same species all next to each other.

- **Protect the soil and saplings**. Cover the soil in mulch to insulate it and stop water from evaporating. It's also advisable to tie young trees to support sticks to make sure they grow upwards over the first few months.

- **Nurture it**. For the first two years, your mini-forest needs daily watering and regular weeding, but make sure not to cut the trees. After three years, the forest will be self-sustaining and can be left to tend to itself.