

AN INGENIOUS *system*

On Madeira, adventure awaits behind every corner, whether you're in the water or on land. Up in the mountains, hiking enthusiasts can explore the island's ancient irrigation channels, the Levadas, while taking in the spectacular natural beauty of an ancient forest.

Words by Nane Steinhoff

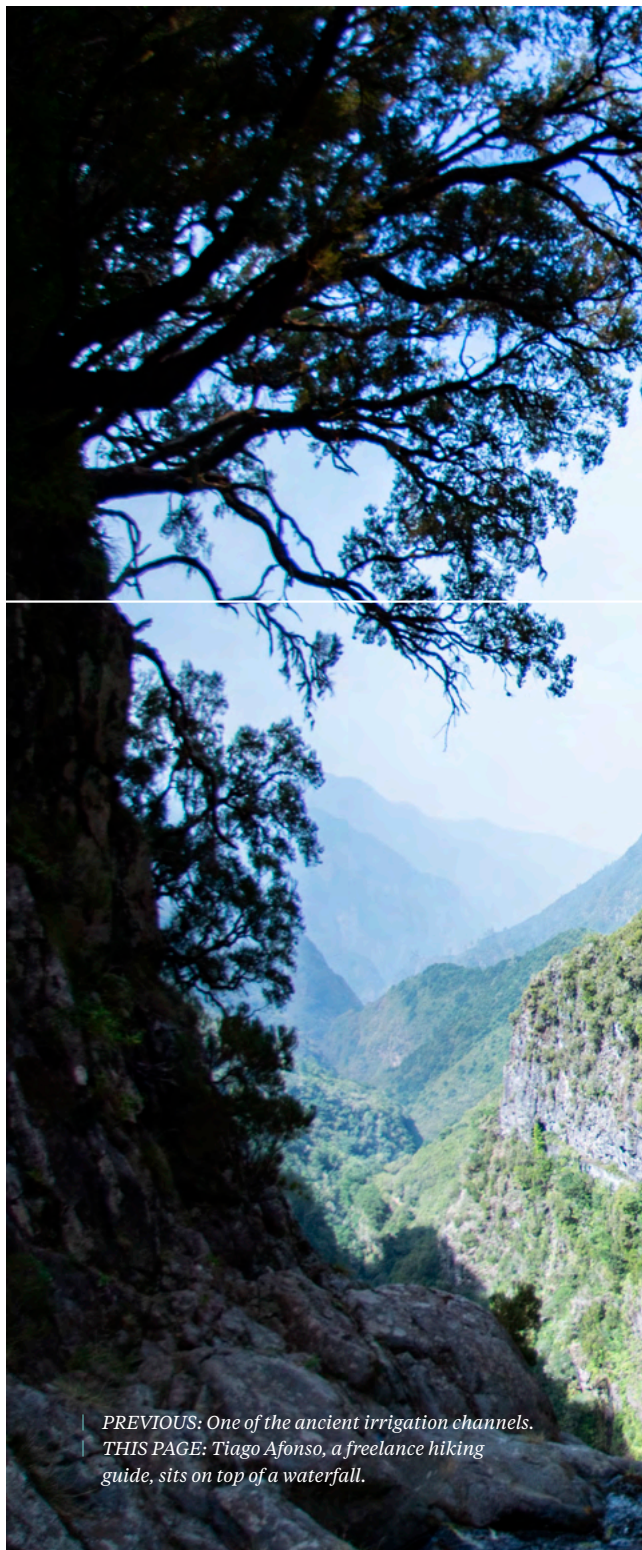
Our small rental car huffs and puffs as it climbs its way up the steep, sloping roads. We pass sleepy-eyed children in school uniforms queuing at bus stops and roadside shops that offer steaming breakfast items. We marvel at vast vineyards and banana plantations covering the steep terrain, while the air that is streaming through the partially opened window is getting significantly cooler by the minute. A short while ago, we left the bustling roads of Funchal in complete darkness; now we're on our way into the mountainous hinterland to explore the more natural side of Madeira. As the sun slowly rises and casts its first rays over the island, I gaze across the lush forests that are dotted across the high peaks. Thousands and thousands of trees are wrapped in morning mist, while various birds flutter around and call out in weird and wonderful tones I've never heard before. I smell fresh eucalyptus and figure out quickly that hiking the Levadas of Madeira will be quite a sensory experience.

55km long, and 22km wide,


Madeira boasts a 144-km-long coastline which makes it the perfect destination for surfers, swimmers, sailors, divers, and other water sport enthusiasts. Further away from the popular beaches, however, on higher altitudes, visitors can experience the living and breathing heart of Madeira which, quite literally, feeds the entire island.

Ruivo Peak, Madeira's highest point, sits at 1,861 metres above sea level. While hiking fans can climb up this mountain, it is also the numerous other hiking trails around the island that attract hikers of all experience levels. From gorgeous valley views to adventurous peak ascents and lush forest walks, there is a hike to choose for everyone. Most visitors will tell you that the true hiking highlights are the Levada walks. With around 150 different Levadas to choose from, these iconic walking trails have attracted walkers from across the globe.


Fundamental to Madeiran identity, the Levadas are an elaborate network of man-made aqueducts or irrigation channels that helped colonise Madeira. As inhabitants of an isolated island in the middle of the Atlantic, inhabitants had to think of ingenious ways to sustain themselves. The term Levada comes from the Portuguese word 'levar' – to carry. And that is precisely what they're meant to do: The first Levadas were built by farmers as early as the 15th century as a means to carry excess rainwater from the interior of the island to agricultural fields all around Madeira. Back then, the agricultural activities mainly revolved around sugar cane; a crop that led to Madeira becoming one of Europe's largest producers and exporter of sugars in the second half of the 15th century. This impressive milestone would not



| PREVIOUS: One of the ancient irrigation channels.
| THIS PAGE: Tiago Afonso, a freelance hiking guide, sits on top of a waterfall.

A man with a beard and sunglasses, wearing a grey polo shirt, khaki shorts, and brown hiking shoes, is sitting on a large, dark, jagged rock. He is looking down and to the left. In the background, a steep, rocky mountain slope is covered in dense green vegetation. A waterfall cascades down the side of the mountain, partially obscured by trees. The sky is blue with some light clouds. The overall scene is a dramatic, natural landscape.

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A full-page photograph of a hiker with a backpack crossing a small stone bridge over a stream in a dense forest. The forest is filled with tall trees and lush green ferns. The scene is captured in a cinematic style with soft lighting.

“In this time of global reckoning the island's connection to the sea has proved as important to its people now as it was 75 years ago.”

Hiking through the protected Laurisilva Forest.



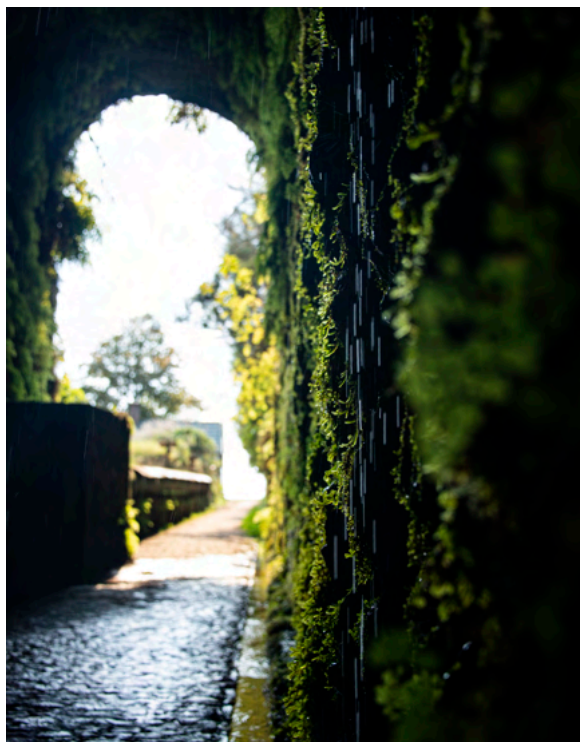
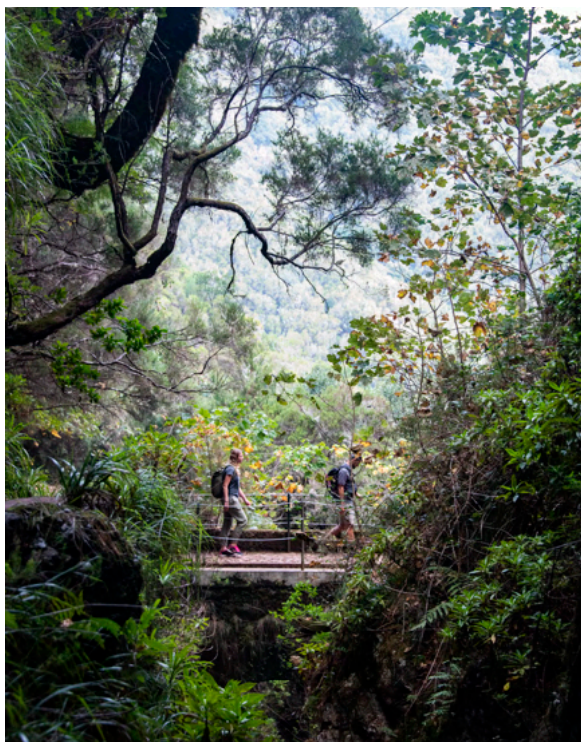
have been possible without the Levadas that channelled water from the top of the mountains to the agricultural fields. Building the Levada network on the steep terrain of the island was no easy feat. Men on suspended ropes had to build the channels along steep mountain tops and through deep tunnels by hand. The idea behind the hard work was ingenious, however. Due to the island's topography, various microclimates dominate the region. While Madeira's mountainous areas are colder and rainier due to winds coming in from the north-east, they are generally seen as unfit for agricultural cultivation. On the other hand, areas in lower altitudes tend to boast arable land, plenty of sunshine and a dry climate without much rain. The irrigation channels brought the two together by making use of the rainfall in the mountains to feed the fields.

Today, the network of Levadas

encompasses around 3,100km of waterways, of which around 80km pass through tunnels. Most of them are still in working order and the island continues to rely on them as water is transported "for human consumption, agricultural purposes and the production of electrical energy" through hydroelectric plants, according to UNESCO. Apart from these practical uses, they have become a major tourist attraction as the Levada network allows for spectacular walks that showcase first-hand why Madeira is often called the Hawaii of Europe.

"The Levadas really show you the natural beauty of the island with which I fell in love a couple of years ago," says Tiago Afonso who works as a freelance hiking guide. "I came for a holiday, but ended up staying for good," he smiles. Tiago who is our appointed guide today has chosen the famous Rabaçal and Levada das 25 Fontes for us. Rabaçal sits at the heart of a beautiful forest and harbours many Levadas; the perfect starting point for our Levada exploration. We start our walk in an aromatic eucalyptus tree forest which, as Tiago points out, is not native to Portugal. After eucalyptus was introduced to the island because it grows so quickly and efficiently, it swiftly spread across the island, displacing native species. As they're highly inflammable and heighten the risk of wildfires in areas where they're present, the Madeiran government is currently testing initiatives to reduce the number of eucalyptus trees on the island.

A dark tunnel, the Calheta Tunnel, suddenly opens up in front of us on our trail. Tiago tells us to put our phone lights on to see where we're stepping. Lichens, moss and cascading ferns cover the wet stone walls in the entrance before the light diminishes entirely. As we step into the darkness, it gets colder the deeper we go into the



- | TOP: A school of circling rainbow trouts.
- | BOTTOM LEFT: Hiking through the Laurisilva Forest.
- | BOTTOM RIGHT: The entrance of the Calheta Tunnel.

800m-long tunnel. On the right hand side, a Levada can be seen in the dim light that my phone emits. For the next few hours, we will follow the Levadas that are no more than a metre wide and between 50 to 60cm deep. On the other end of the tunnel, we have to balance on the side wall of a Levada to cross a river, before we pass lichen-covered trees that appear hundreds of years old. We pick wild strawberries from the ground and marvel at unprecedented ocean views. From time to time, we spot glimpses of the grand valley that is covered by lush green trees as far as the eye can see. They together form part of the Laurisilva Forest, a UNESCO World Heritage

“There are over 100 endemic flowering plants on Madeira, and many are hidden within the Laurisilva Forest.”

Site within the Parque Natural da Madeira (Madeira Natural Park).

Covering around 15,000 hectares or 20% of Madeira, this special forest can primarily be found in higher altitudes. According to UNESCO, “the Laurisilva of Madeira is an outstanding relict of a previously widespread laurel forest type” which existed around 20 million years ago. 90% of it is still considered primary forest and it “is the largest surviving area of laurel forest” that today can only be found on the Azores, Madeira and the Canary Islands. As we criss-cross the protected forest that hosts Azorean laurel, Canary holly, tree heather, Madeira elder, as well as Madeira mahogany, a variety of ferns and mosses, and many more species, we spot a number of beautiful flowers, some rare endemic plants, and even see one of the two endemic birds that call the forest their home – the Madeiran laurel pigeon. “There are over 100 endemic flowering plants on Madeira, and many are hidden within the Laurisilva Forest,” explains Tiago.

Not only harbouring many ecological niches and refuges for endemic plants and species, the highly humid laurel forest is often called the ‘water-producing forest’. It plays a crucial role in the island’s hydrological balance and helps feed the Levadas. While 40% of the water in the Levadas directly comes

from rainwater, the trees here indirectly feed 60% of water into them by absorbing fog and putting the resulting water mass into the soil and thus, the Levada network.

Along our hike, we see the wilted remnants of once blooming flowers everywhere. Between March and June, a bit earlier in the year than we have come, the sub-tropical climate allows for most flowers to be in full bloom. Tiago tells us that big bulbed blue agapanthus then sit on slopes everywhere, while aloe vera shows off its red flowers, and visitors can marvel at several orchid species, the Madeira viperine, geraniums, the bright, flowering bird of paradise, and hydrangeas, amongst other fascinating species.

Around the next corner, the forest suddenly opens up in front of us and reveals a waterfall on the other side of the valley – the stunning, 100-metre-tall Risco waterfall, the largest on Madeira. The dazzling green combined with the loud gushing of the falling water masses makes for a great experience. We continue and have to climb up some stairs, before we reach the 25 Fontes waterfall, called after the number of water springs gushing out the rock. Here, the waterfall and the 24 springs fall into an alluring lagoon that is covered by lush ferns and big boulders.

Next, Tiago takes us on a more secluded route. After taking a small break at the Rabaçal Nature Spot Cottage and Cafe, a well-known café and bookable B&B amidst nature and with glorious views, our guide leads us up even more steep steps. My legs almost give in as we take the last step. “It’ll be worth it,” he promises, laughing.

Suddenly, a secluded pool lies in front of us. As we dunk our tired legs in the ice-cold water, I notice a quick movement in the corner of my eye and spot a school of fish swimming in unison. “There are rainbow trouts all over the levadas,” explains Tiago after seeing my surprised face. “Farmers introduced them as a protein source in the past and they continue to reproduce naturally throughout the extensive network.” Yet another ingenious way of Madeirans to sustain themselves without the need for outside help.

While the best time to go hiking on Madeira is between September and November when temperatures start to become a bit cooler, some Levadas trails are open all year. During the rainy season in January and February, some waterfalls might flood the trails and they get shut. That’s why it is advised to check the status of the trails year around. Tiago adds: “Some people even come for snow hikes in winter. There’s so much to discover here – and it never quite looks the same.” 