

### **BALTIC Climate Frequencies Episode 3**

**Natalie Sharp:** Forests are the Earth's lungs, breathing in carbon dioxide, breathing out oxygen. Forests are some of the world's oldest ecosystems. But as they exhale, what do you think forests are trying to tell us?

My name's Natalie Sharp, and you're listening to Climate Frequencies, the new podcast series from BALTIC in Gateshead, and we're going to be exploring the climate emergency through sound.

So far, we've listened in on rocks and soil. Without human interference it's rare we hear them make any noise, but some parts of the rainforest have been making their own sounds for around 70 million years. In this episode, we'll be exploring the Amazon rainforest. As we travel deep into the heart of the Amazon, perhaps we can strengthen our relationship through the biodiverse species we find, and how can this contact with other life forms change our perspective on the climate emergency?

**David Monnachi:** There's not so much time left to portray the result of these millions of years of sonic evolution. Things are already changing.

**Paulo Tavares:** What are the forces that are driving this type of destruction? How do they operate on the ground?

**Natalie Sharp:** We'll be bringing together sound artist David Monnachi and urbanist architect Paulo Tavares. They'll be discussing their experiences of documenting the destruction of rainforests in South America and the effects it's having on both human and non-human inhabitants.

**Maria Thereza Alves:** And by the time my father was a young boy, he said the trees were all cut and the saw mill barely functioning. He explained that their forest was how the Americans got the wood to build their houses.

**Natalie Sharp:** And artist and writer Maria Thereza Alves reads from her book 'Recipes For Survival', looking at the effects of the timber industry in the town in Brazil where she's from. Parts of this text come with a trigger warning.

**David Monnachi:** My earliest contact with the Amazon was actually maybe 10 years before starting the project. The first trip was done in the Amazon, in the centre of the Amazonia state, into a spot of absolutely untouched primary forest.

**Natalie Sharp:** David Monnachi is an Italian sound artist, composer and sound designer. In his project 'Fragments of Extinction' he's recorded rainforests around the world, capturing what he calls intangible sonic heritage. The sounds David has recorded in rainforests around the world are the sonic heritage of millions of years of evolution. He's devoted to saving fragments so we can study, understand, enjoy and conserve it, so that future generations can experience imprints of the sonic intelligence of nature, which is sadly disappearing.

**David Monnachi:** I'm working on a project called 'Fragments of Extinction', since about 21 years ago this year. At that time in 2002 I didn't really have an idea of what I was going into. What the microphone recorded was an incredible polyphony of hundreds of species vocalising simultaneously in an ordered and very precise way.

We've been recording soundscapes in the equatorial primary forests. The goal of this project is to digitally store sonic imprints of ecosystems before they get damaged from deforestation first of all and then, of course, climate change.

We actually also do sound installations and we try to mobilise the general public toward the issue of the sixth mass extinction.

Really the Amazon for me was the start of the entire project then developed in other continents.

What we heard was just a straight, pure recording of the Amazon primary forest in the Yasuni area in Ecuador. It was the forest after the rain, which came after 30 days of complete drought, and this was the exact moment when the rainforest was starting again. It's a vital sonic environment.

There are a lot of sound species. Everyone is occupying its own space in time and in frequency and so there is a subdivision of the common sonic habitat. These are examples of the acoustic behaviour, which is completely natural, which is complex, and which can talk about an organisation of sounds that needed millions of years of evolution in order to find space for every species.

With 'Fragments of Extinction' we do 24 hour recordings, so entire circadian cycles. We are trying to do that with the best technology that is available today, something like 38 microphones employed together. The idea is to sample the entire spatial behaviour of the inhabitants. As we know, these ecosystems are changing for construction of roads, deforestation, and of course, mining.

**Natalie Sharp:** In the last 70 years, we've lost over half of our tropical rainforests. Now rainforests are disappearing at a shocking rate. Every single second one football field of forest is lost. In episode two, we were talking with Suzanne Dhaliwal about the tar sands in Canada and how it's being deforested at the same rate as the Amazon. This is a global problem and the knock-on effect of deforestation is the dwindling numbers of species in these habitats. Many biologists reckon that rainforests are losing between 5-10% of their species each decade.

**Paulo Tavares:** My name is Paulo Tavares. I am an architect and I'm speaking from Brazil, from the centre of Brazil, Brasilia.

**Natalie Sharp:** Paulo has been investigating some of the industries and sites that are most destructive in the Amazon. His work is all about conflicts going on in areas where cities interact with remote ecologies.

**Paulo Tavares:** Contrary to David, I'm not, let's say, looking for pristine environments. I am more on the side of documenting the destruction. What are the forces that are driving this type of destruction and how do they operate on the ground? They happen sort of in remote zones. You know, they are mining, also logging trees everywhere in Amazonia, so you know, the place can look remote.

One of the most striking places in that sense that I've been in Amazonia, it's a big sort of open mining pit called Huaypetue in Southern Peru. You are really in the middle of the forest, and then suddenly you arrive in a space that has a kind of moon-like landscape, just sand exposed to the open sky, and it goes for about 100 kilometres or something like that. It's really a kind of huge mine in Southern Peru and you have a city in the middle of this mine. This was when there was the big sort of financial crisis. What happened is that the price of gold went really up in the international market.

**Natalie Sharp:** It was because of this that lots of people moved to the area to find work and large areas of the forest were cleared to make way for people who live in these industrial zones.

**Paulo Tavares:** You may call it a stand tent city, you know, a city that just pops up out of nothing, made off, you know, tents and elevated streets of wood, so those cities would just emerge in the middle of the Amazon and they would destroy everything around them because they would mine the area, cut the trees and mine the area, and they would move somewhere else to get more gold. So it was quite impressive to see how this sort of global phenomenon has a localised impact.

**David Monnachi:** Of course, mining Paulo was describing before. These subtle cues of species are affected by the small variations of the climate.

**Natalie Sharp:** I wanted to talk about the installation of 'Forest Law'. Perhaps you can tell us what you were trying to communicate or achieve with that piece of work?

**Paulo Tavares:** 'Forest Law' is a project that I developed with filmmaker Ursula Biemann. We travelled to three areas of the equatorial Amazon. We went to a territory called Sarayaku, and the Sarayaku people are globally known for their fight against extractive industries. Basically, they don't allow any extractive industries to enter close to the territory. When oil companies were trying to dig in the territory, basically what they did is set up fighting camps, to block the entrance of geologists and topologists that were prospecting to understand how much oil this territory has.

For indigenous activists and indigenous communities in general, the forest is not an object. It's not a passive being, right? It's something that is alive. The Sarayaku people, they have this concept which they call the Kawsak Sacha, which is the living forest, right? The forest

populated by spirits. You know, the plants, they are beings. They are considered sensitive beings, as humans.

**David Monnachi:** Before doing this recording, I was witnessing 33 days without any single drop of rain. Can you imagine what happens to this delicate environments of biodiversity, what happens when such a change arrives?

**Natalie Sharp:** When listening to these recordings, it's easy to understand this idea of the living forest that Paulo talks about. They kind of remind me of FM synthesis. Each species has its own oscillation, its own frequency, and together they make up this expanded orchestra, which is a seismic organic synthesis of sound.

**David Monnachi:** There were recent studies that described this environment around the Yasuni River and the Tiputini River as the area containing the highest biodiversity rate in the world. When you move through a forest it's like you're moving into a giant network of interrelated communications of small animals, insects, amphibians. These sounds cohabitate the same environments and everyone is able to send his message and to receive the message. And so with our recordings, we are also trying to map the spatial cues. We have to think of the forest not as an acoustically dry environment. The forest can be very reverberant.

As Paulo knows, the Amazon, it becomes completely flooded. An entire area of dozens of kilometres sometimes, which becomes flooded. And you can travel with a canoe into this flooded forest and the specificity of the soundscape in there is really amazing. You are in a cathedral because the water and the high canopies are sound reflective. The tree trunks are like columns in a cathedral.

**Paulo Tavares:** The forest, somehow it produces water. It evaporates, it transpires water, so it's a kind of water producing machine in a certain way, right? Besides being a cathedral for sound, it also operates as producing moisture.

The most urbanised areas of the continent, you know, the most industrialised areas of the continent, where all the sort of larger cultural fields are located basically, and I'm talking here about, you know, Argentina, Brazil in the Southern part. So basically the rain that feeds these areas comes from the Amazon. Because of the winds, it arrives here and they call it the flying rivers. You know, it's again, a river that we cannot see, but it's kind of floating in the sky.

**Natalie Sharp:** Given that complexity, it's pretty devastating to watch the Amazon being destroyed at one of the fastest rates in recent memory. The oil companies, the military leaders, they're all on the front line, in a brutal assault on the people and on the habitat of the Amazon.

But this isn't new.

In her text 'Recipes For Survival', writer and artist Maria Thereza Alves documents the history of the lumber trade where her family come from. You may find parts of this reading upsetting.

**Maria Thereza Alves:** My father's village is in the state of Paraná in Southern Brazil. This area was a contested and defended indigenous territory of the Kaingang, Xokleng, Xeta and Guaraní peoples. It was a land of the Atlantic forest, which covered large parts of Brazil, parts of Paraguay, Uruguay, and Argentina. The majority of this forest has been destroyed.

In this region there are huge, generous and graceful Araucaria pine trees. The army came in and a genocidal campaign was waged to remove indigenous communities for the building of colonising railroads in the late 1800s, which would bring in white European settlers while extracting minerals and wood and later cattle and agricultural products.

My father talks of the company known as Lumber. It is the USA owned, Southern Brazil Lumber and Colonization Company. It was allowed to cut 15 kilometres of the forest on either side of the railroad tracks. The company would then own this land, which they offered for sale to European settlers, thus dispossessing those who had become known as squatters. Lumber's headquarters was in Tres Barras, today a half hour car ride away from my father's village. The company devastated the entire region and by the time my father was a young boy, he said the trees were all cut and the saw mill barely functioning. He explained that their forest was how the Americans got the wood to build their houses.

Lumber's activities in the region would lead to the War of the Contestado during the first part of the 20th century, which united indigenous peoples, squatters and the unemployed. Over 8000 were killed and they lost the war. On Lumber's former facilities today are installed the Brazilian Army's largest training camp.

The government and colonising companies recruited *bugreiros*, hunters of *bugres*, a racist term used to de-ethnicise indigenous peoples. *Bugreiros* were hunters of indigenous people who were legally authorised to hunt and exterminate indigenous peoples in Paraná and the neighbouring states of Santa Catarina and Rio Grande do Sul, thus making stolen lands available to settlers. These today are the three whitest states in Brazil. Until today, no indigenous language is recognised in these states. In some of these municipalities, the teaching of German or Italian is mandatory.

Proof of death of an indigenous person was their ears. *Bugreiros* would kill indigenous people legally until 1914, but the killings continued. The last known massacre of an indigenous community in this specific area of my father's village was in the 1930s. The white family that was involved along with others in this massacre still live in the community today, and the killings of indigenous activists continue today.

I returned to the backlands of Brazil in 1983 to document where my family, who are descendants of indigenous peoples, Europeans of unknown origins and of enslaved Africans,

are from. In Brazil at that time, history forced us as the subject to become and remain the other.

'Recipes For Survival' is an attempt to document as active agents those who are critically engaged with history. There are only a few actual recipes in 'Recipes For Survival'. Instead, I asked people who or what they wanted documented.

José Antonio, my uncle, feared being made into a slave - a not uncommon practice in Brazil - by working in a plantation far from home. In 'Recipes For Survival' an attempt began to define ourselves and to make our history.

Hello, I'm Maria Thereza Alves, and I will be reading from my book 'Recipes For Survival'.

The timber company.

Since José Antonio was not going to buy groceries on credit because the interest rates were too high, he went to work as a day labourer at a timber company about two hours away from the village. A multinational company owns 5,000 acres there. The entire area had been a virgin forest, a worker there explained. The company is systematically burning it all down, leaving exempt the strip near the river, which will protect the banks from erosion. Where once native Araucaria Pine trees grew, North American Pines and Australian Eucalyptus trees have been planted. This is called reforestation. Timber developers are eligible to receive money from the government for the replanting of trees in deforested areas.

José Antonio likes to work for the timber companies because they're clean, he says. He means there's no undergrowth to hide snakes. In these man-made forest of non-native pines and eucalyptus, there are not even birds. There's no food for them. Locally they are known as the forests of silence. The acid from these trees kills all other native vegetation.

The men on this plantation are paid by the amount of land they clear. This is a smart move by the company's agents, since they do not have to pay the men for days when they cannot work because of the rains. José Antonio will test it out for a week and see if he gets paid. If so, then he will continue. He is already wary because the company is going to give the men a wage based on the old official minimum wage.

José Antonio was also worried about the overseer keeping his workbook, which is kept by the employer until the employee leaves his job. It is common practice for employers not to return workbooks as a threat to keep employees working for low wages or no wages at all. The men can thus become easily enslaved. José Antonio was worried about this and had asked me to come along and tell the overseer that I was a journalist. He asked me to take many photographs of all the men working there so that if they were made into slaves, I would have proof that they existed.

The company provides the men with plastic for makeshift tents. The men usually build a tent against the side of a hill to get some shelter from the wind. When it has been raining hard, the water coming down the side of the hill pours into their tents. After the first rain, the men

were forced to take time out to make bed stands. The only transport to their villages is by the company truck, which cannot make it up the hills when it rains.

The first thing José Antonio did when he got back from working at the timber company was go to the bar and get drunk and gamble. Maria was very angry, but he had won at cards, he explained. As it turned out, he won a dozen bottles of beers, which only made her angrier. Then Maria started complaining about the jobs he got and the wages he was getting. She asked him why he had not gone to work at the apple farm, where they were paying more money. José Antonio said the land there was much more difficult to clear and so he would get less money in the end.

**Natalie Sharp:** Listening to Maria Thereza talk, I can't help but think that the fight for indigenous rights and the fight to slow the rate of deforestation are actually linked. But how do we start considering both of these fights as being bound together in what Paulo talks about as interspecies alliance? An alliance between humans and non-human entities against these destructive forces.

**Paulo Tavares:** Ecuador is also known to be one of the first countries, together with Bolivia, that introduced in constitutional law, the idea that nature is a subject of rights. That is to say that nature has to have some rights as we humans do because it's a living being.

**David Monnachi:** Yes.

**Paulo Tavares:** Right? I call it non-human rights.

**David Monnachi:** Yes. I definitely agree.

Maybe to add, they know the environment, they respect that, they enter into a diplomacy because they are connected.

We are into climate change. Yes, we have to mitigate. We are already in that phase of mitigation, but we were into the mitigation of climate change 12 years ago. If the states have the sovereign rights to do whatever they want within their territories, we are not going to solve the climate crisis. Paulo knows that very well, because Brazil is of course such an important country for world climate.

**Natalie Sharp:** And Paulo, what do you think can be learned from indigenous communities?

**Paulo Tavares:** It's a very powerful political frontline that they are drawing, in that, you know, in the spirit of political solidarity, we also need to align with their politics. What David mentioned, we are losing something that we don't even know, this complexity, this diversity of the natural world that we are losing and somehow indigenous groups are pushing us to fight for this, for life on the planet, right? So it's a universal struggle in the strong sense of the word.

**David Monnachi:** And somehow the arts can very much help in understanding that, which is the first step to try to rebuild this ecocentric perspective. We have to look back in time to understand why it is important to put all our energies now to do this paradigm shift.

**Paulo Tavares:** The Sarayaku people, they say, you know, the forest is occupied by Llaktas, which means communities, but of course those Llaktas are not human communities. They're communities of birds, communities of jaguars, communities of rivers and things like that. We cannot damage that part of the forest because there is a living community there. So you need to engage in a sort of diplomacy with these other species, so you can live together, and that's the fundamentals of politics.

**David Monnachi:** Even with the best treaty that we can expect from COP26 in Glasgow, not taking an airplane if it's not 100% necessary, doing zoom calls as we are doing, eating a quarter of the meat that we eat today, all the things that we know are necessary now... this will not happen if the singles of societies around the world will not perceive what we really have been detached from within our Western society way of living.

**Paulo Tavares:** We need to build a political arena, which is not only human. Other entities also participate in this arena. The river people, the mountain people, the jaguar people, the monkey people, all of them are peoples occupying this large diplomatic cosmopolitical forum and we need to understand that this is the word we live in.

We need to get rid of this idea of centrality of the human species and understand that there's a much broader, much larger world, which goes beyond the human.

**Natalie Sharp:** Can we just talk a little bit more about what future generations can learn, and David, maybe you can talk about the sounds that you've been collecting?

**David Monnachi:** The original signature of evolution will be lost. Let me present to you another soundscape recorded in a Northeastern part of Borneo. This is one of the oldest primary forests that we have on Earth. This was recorded in 2012 in the Brunei state, in the Northeastern part of Borneo.

This is why we trust in those fragments that we are collecting to make sensory experiences in the future that will enable future generations to understand directly how the world was before the big change that is expected now.

**Paulo Tavares:** Incredible work.

And David make's that point, you know, how art is important to somehow, you know, bring us back to feel the planet, to connect us with the planet. It's super important to make us see because it's only through experience that we are going to become aware. Art has embraced ecology.

**Natalie Sharp:** I wonder what would happen if we did bring 'Fragments of Extinction' to the next summit, whether that would make a different impact on how things went, or what the discussion was.

**Paulo Tavares:** David's work, it's kind of incredible, you know, the audio that we heard here, it's kind of incredible to bring us this experience of what this region of the forest is like.

**David Monnachi:** Yes.

You know, I had the opportunity to present 'Fragments of Extinction' at a CBD COP for the biodiversity convention in Egypt in 2008. I really felt that the 4,000 people that were there, delegates from all the governments in the UN, it was really four minutes of reconnection. These people really understood the value of biodiversity from another perspective, which is a very animal perspective.

**Paulo Tavares:** We cannot escape anymore because things are happening in front of our eyes.

**David Monnachi:** Yes.

**Paulo Tavares:** If you live in Australia and you have experienced that fire, you know what happened there, you can never come back from this experience the same way, right? Because you saw it, you know, you felt it. This is what's happened with the planet.

**Natalie Sharp:** If we're going to save our planet, it is true that the decision-makers at COP26 and in the UN have a lot of power, but we can all do our bit by reconnecting to the planetary animal sense of the world. So what can the trees teach us about interspecies alliance and how climate is shifting?

Listening to David's recordings reminds you of how small and insignificant you are in the grand context of these ecological networks evolving over billions of years.

We've listened to David's sound installations, and the writing of Paulo and Maria Thereza, and they're all plonking this right in the middle of this disappearing world, a call to arms to act now, or we lose them forever.

You can find out more about their work on the BALTIC website. In the next episode, we'll be following the waterways through the land and out to the sea, tracing the sounds of climate emergency in aquatic and marine environments as they bubble to the surface.

Climate Frequencies is a Reduced Listening production produced with music and sound design by Femi Oriogun-Williams. The executive producer was Alannah Chance and I'm Natalie Sharp.

See you next time!