Pontal, Brazil

Restoring the Atlantic Forest to bring back wildlife

Annual Progress Report 2022

Summary

Our collaboration with Instituto de Pesquisas Ecológicas (IPÊ) is reconnecting forest fragments to create wildlife corridors in the Pontal do Paranapanema region.

After the setback of the unprecedented frosts in 2021, the project is now progressing well, and things are on track. Another 120 hectares had been restored by April 2022, and 138 hectares more between May 2022 and February 2023.

Survival rates should show a healthy increase this year, because the rains have been fantastic. We've also made some adjustments to make sure mortality is reduced, as well as ensuring that exotic species don't compete with our native seedlings for water and resources.

As this is such an important project for fauna, our impact here is measured by the return of animals to the area. We've got various ways of measuring this. The data from the first year of sound samples collected with Rainforest Connection was analyzed, and our camera traps show that 25 medium to large mammals are roaming our sites!

It's great to know that our projects will have a long-term impact, too, and the NewFor research project has confirmed just that. The carbon stock of our young restoration sites compares favourably to that of similar aged restoration sites elsewhere in the Atlantic Forest, and in 30 or 40 years, the areas we're restoring today have the potential to achieve the same level of carbon stocks as old-growth forests.

This report shares an update of our progress during 2022. Thank you for all your support!

2022 in numbers

120 hectares, representing around **240 000 trees**, was concluded in April 2022

Another **138 ha** (representing around **276 000 trees**) began planting in May 2022, concluding in February 2023

178 species – 4 of which are threatened – detected in the 120 sampling sites: 166 birds, 8 frogs, 2 mammals and 2 insects

25 terrestrial medium-large mammals were registered by the camera traps

All-time:

1265 ha restored

2 530 674 trees of **138 native species** planted and regenerating

Restoration

258 more hectares (approx. 516k trees) planted and restored

Our collaboration with Brazilian NGO Instituto de Pesquisas Ecológicas (IPÊ) carries out forest restoration in the Pontal do Paranapanema region, reconnecting forest fragments through the restoration of wildlife corridors.

Our implementation partners here plant throughout the year, not only during the rainy season, and use irrigation and hydrogel to ensure that the seedlings establish themselves well. This means the planting of a particular year's target hectares can span the end of one year and the start of the next.

This means that the planting that started in December 2021 of another 120 hectares (equivalent to around 240 000 trees) was still going on in early 2022, finally being completed in April 2022. 45 of these hectares were in the northern corridor in Estrela Farm, where we have been carrying out restoration since 2018. The photo above shows how the new area looked by August 2022, with the

Restoration area in the north corridor, shown in June 2020 (left) and again in August 2022 (right).

seedlings coming up nicely despite some grasses and weeds.

The remaining 75 ha were in a new farm, Categeró, in the east corridor – the new expansion of the project to the eastern side of the Morro do Diabo State Park – and were finished by March 2022.

After this round of planting was completed, the teams set out to identify the areas for the next planting activities, which would start in May 2022 and finish by February 2023. These 138 hectares were all in the same area, Estrela Farm in the north corridor. Below is a photo of how the planting was looking by August 2022. Unlike the area of Estrela Farm planted at the beginning of the year, the grasses and weeds haven't had a chance to develop yet.

The planting areas for 2023/2024 had not been defined at the time of writing, but this is expected to be completed soon.

Estrela Farm, planted in May 2022 and pictured here in August

This year's rainy season has been superb – at least for the seedlings! It's been raining every day according to our colleagues in the field. Not only are the new areas already doing well, but the weeds and grasses are too – which poses a challenge. More maintenance is needed to keep these competing species at bay.

Aside from the planting and maintenance activities, we've also been implementing some corrective measures to improve survival rates and species selection. Replanting was carried out in young (less than two-year-old) restoration sites where mortality was very high after the frosts of 2021, and thanks to the abundant rain, those areas are now doing really well.

Protecting existing forest fragments

One of the project's objectives is to explore the possibility of working together with local landowners to convert 10 forest fragments that represent 3253 hectares into Private Reserves – a Protected Area category that would legally guarantee they remain forests in the long-term.

COVID-19 restrictions on travel substantially delayed this work throughout 2021, and efforts then were concentrated on developing a brochure to inform landowners of the importance of protecting remaining forests in this landscape. 2022 was election year, which always creates delays in decision-making, and we expect to see progress with this initiative during 2023.

Managing the challenge of exotic species

While getting our seedlings from a multitude of community plant nurseries is great because it fosters entrepreneurial activity in the communities, particularly for women, it means it can be harder to have control over the species that we receive for planting. Nursery staff collect seeds themselves and are supposed to do so in the forest; sometimes, however, they also take them from their gardens or the street. Moreover, several community-based organisations are carrying out the planting of the restoration areas, all using techniques of their own.

With our partner IPÊ we are working on strengthening a systematic approach to ensure seed collectors, nursery workers and planting organisations are all aware of exotic species and that the wrong species in the wrong place can affect the impact of the project. A workshop was held with the nurseries in 2022, and our monitoring visits enable us to replace exotic species with native ones if necessary.

Impact

Many ways to measure success

We received some very impressive drone pictures from CEIBA and IPÊ of some of our restoration areas. They were received a bit later than expected because of a technical hiccup: a drone was attacked by a hawk and fell into the river! They show very clearly the significant progress that has been made over the last two or three years.

In as little as three years, this restored area in the north corridor's Sao Paulo farm (shown below left in September 2021 and right in January 2023, now a 3km long stretch of green – has connected two large remaining fragments of the Atlantic Forest. It will provide a new migration route to help black lion tamarins, which are known to be present in the northerly fragment, to spread and thrive.

Getting such great before and after images is quite challenging. It takes a lot of forward planning to take the same shot at exactly the same angle in exactly the same season or weather conditions three years later – but that's what we try to do!

You can see more new before and after and drone photos in the project's Flickr album.

Sounds of our restoration sites…

In 2022 we received the first sound samples from our collaboration with Rainforest Connection (RFCx) using innovative acoustic

Some before and after photos may not seem to show much improvement, as in this example from the west corridor that was planted in 2017. In fact, the Pontal area used to be savannah (cerrado in Portuguese) as well as Atlantic forest, and this particular area used to be a wooded savannah, so the tree cover is never going to be as dense as in the forest. However, even with this sparse amount of tree coverage, it still works as a wildlife corridor – always better for birds and animals than the agriculture that surrounds it.

technology. The aim of this project is to monitor bird and animal species diversity, distribution and activity patterns, as well as providing data for RFCx's digital library of shareable, searchable forest sounds and ecodata for use by scientists and land managers to help protect and conserve the world's forests.

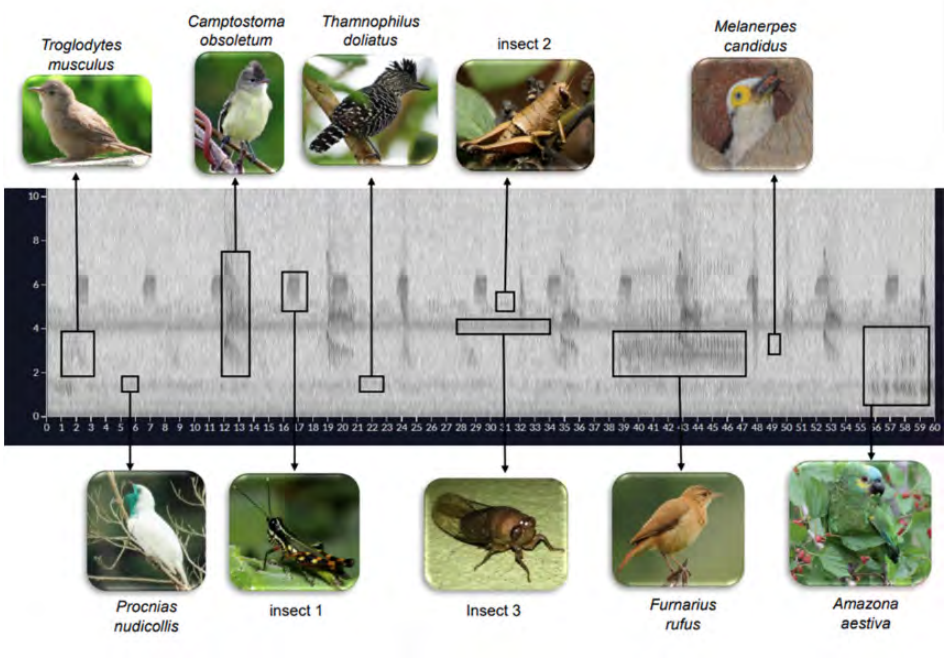
120 audio devices have been monitoring bird and animal species in sampling points in our restored areas, the forest fragments and also in agricultural areas. So far, the sounds of 178 species were detected in the 120 sampling sites: 166 birds, 8 frogs, 2 mammals and 2 insects, 4 of which are listed as threatened according to IUCN's Red List.

Listen to the sound of a toco toucan (*Ramphastos toco*) and the endangered black lion tamarin (*Leontopithecus chrysopygus*). You can also Visit the RFCx Insights platform to listen to more sounds, for example the campo flicker (*Colaptes campestris*) and flavescent warbler (*Myiothlypis flaveola*) recorded in the West Corridor.

Forest frequencies

During 2022, Nike – who has financed the first part of the RFCx research project – used some of the sounds that were collected for their 'Forest Frequencies' series, which immerses the listener in the sounds of the Atlantic Forest. These audiovisual experiences on the Nike app take listeners from the forest floor to the upper canopy with meditative instrumentals that channel our forest sounds, which include bird- and frog song, the hum and buzz of insects, leaves rustling, branches creaking, gentle breezes and pattering rain. Find out more here.

Analysis by RFCx shows that bird species richness was higher in forested and restoration sites than in farming sites, indicating that restoration sites are promoting a positive effect on biodiversity, providing breeding and foraging habitats, and/or connectivity stepping stones for a large portion of the bird community. This is very encouraging, suggesting that even though our restoration



sites are still in the early stages of development, they are already functioning more like forest habitat than adjacent farmland, providing habitat to many species associated with protected forests.

The RFCx research project lasts for three years, and the final year's samples will be recorded during 2023.

…and sights

We can also see the impact we are making for the inhabitants of the landscape with our own eyes, thanks to the camera traps that were dotted around our restoration sites in September 2021. No fewer than 25 terrestrial medium-large mammals were registered by the cameras, including two non-native species: the European hare and, unsurprisingly, domestic dogs!

In September 2022 we produced a video showing many of the large mammals that have been benefiting from our wildlife corridors: tapirs, maned wolves, giant anteaters, pumas and even a jaguar! There are only around 20 living in the Pontal area, so we were lucky to spot one.

It's not only heartwarming to see this many animals benefiting from our restoration, it's also going to have a positive effect on the speed and success of our efforts. Fruit-eating animals such as tapirs – and maned wolves, even though they look like carnivores! – contribute to our work by leaving other seeds in their droppings to regenerate spontaneously in our sites.

Increasing our carbon stocks

In 2022 we received the results of the NewFor project in Pontal, a scientific partnership with the University of São Paulo and our project partner IPE using airborne LiDAR (Light Detection and Ranging) to measure the carbon stocks of our restoration sites and the forest remnants.

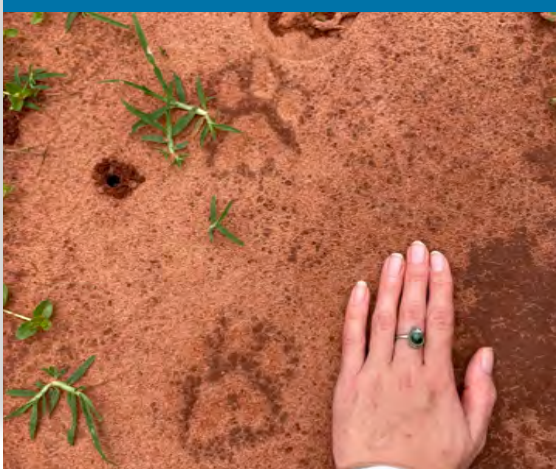
During 2021, LiDAR data was collected over 4200 hectares of different forest types, including WeForest's restoration sites, old-growth forests and agroforestry systems. Detailed carbon mapping shows that although carbon stocks vary widely from area to area, the average carbon stock of our restoration sites is comparable to similar restoration sites elsewhere in the Atlantic Forest.

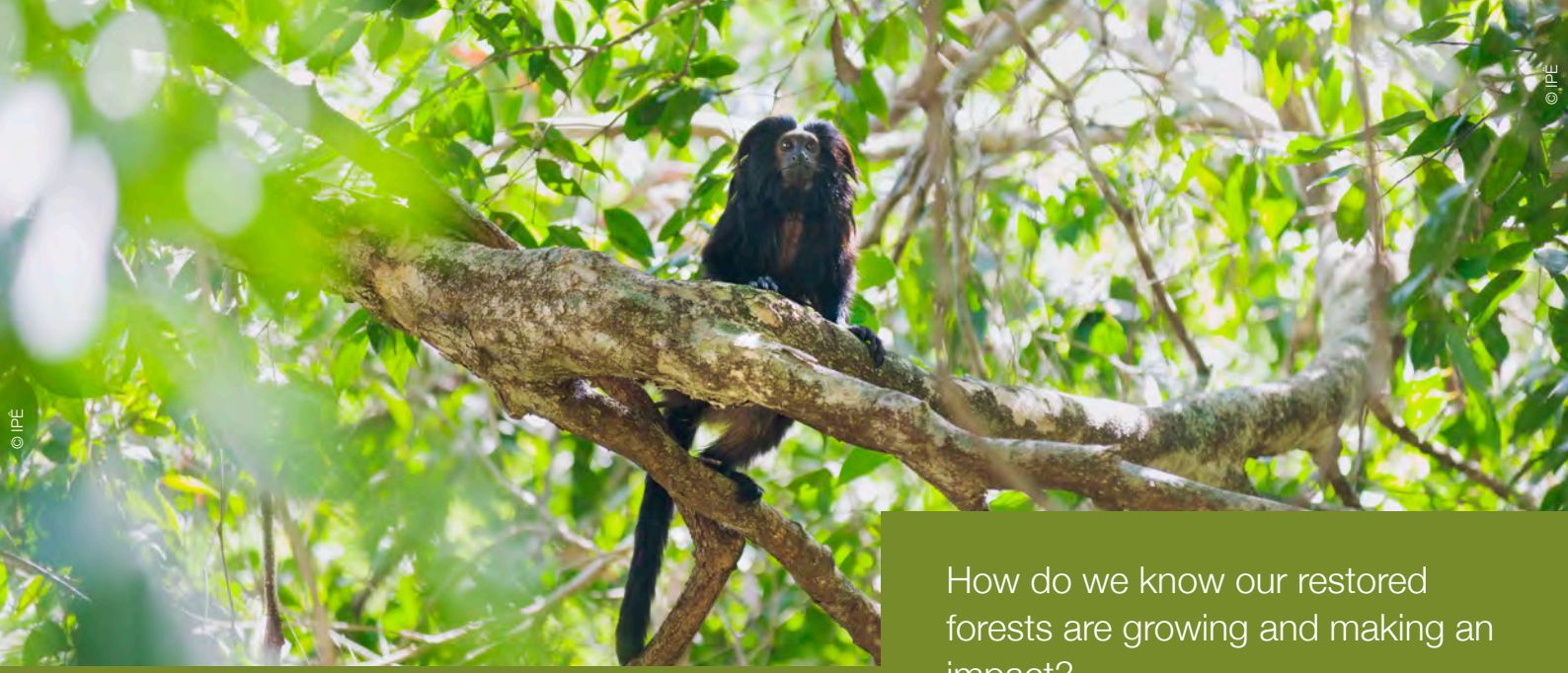
This is a good sign, meaning that although they're still young, our new forests are progressing as expected in terms of carbon accumulation. It means that in 30 or 40 years, the areas we're restoring today have the potential to achieve the same level of carbon stocks as untouched, old-growth forests.

WeForest will use the findings of the NewFor Pontal study to create more nuanced growth and development trajectory expectations for our restoration sites. It will help us develop longer term monitoring and evaluation plans in Brazil, taking into consideration the large variability seen in carbon sequestration between restoration sites due to differing site conditions.

A good sign

These puma footprints were spotted in one of our most recently restored sites. This is very encouraging, as pumas are struggling. They have been spotted in cities recently, which is not a good sign. They are able to navigate the landscape as it is, as agricultural sugarcane fields provide good hiding places, but there's very little of their natural habitat remaining. It's good to know that even in our very young forests with very small seedlings, pumas are around.





What's Next?

- We will be defining the new areas that will be planted next season.
- We're planning a workshop in June between Pontal and our nearby Tietê Forests project, which we're running with partner AES Brasil. The idea will be to exchange experiences and good practices, and both sides will present their project highlights.
- One more year of sound sample collection with Rainforest Connection will take place.
- The polygons undergoing a vegetation assessment in 2023 will be decided in March-April. Once the vegetation assessment is approved, it will be shared with IPÊ to discuss and define corrective measures.

How do we know our restored forests are growing and making an impact?

Every hectare under restoration is mapped with GPS points to generate polygons (areas on a map) that are assigned to sponsors. We carry out annual vegetarian assessments done by local consultants in the first 2-3 years after planting to check survival rates, how the canopy is developing, and biodiversity. We plan to have remote-sensing-based analysis of tree cover performed periodically, to make sure all planted areas develop a closed canopy.

We also measure our social impact by keeping a record of the number of people involved in the community-based nurseries and local planting and maintenance companies. These only exist thanks to the support of IPÊ and WeForest.

Please visit our **What We Do** webpage for more information.

WeForest
Making Earth Cooler

Stay up-to-date with your interactive **Pontal map**, and check out the **photo album** of the project on Flickr.

Thank you for supporting the Pontal project!