

**BUSINESS**  
Nature-based solutions

**ECOTOURISM**  
New activities in touch with the forest

**RESEARCH**  
Human, environmental and animal health

**SOCIAL ENGAGEMENT**  
Connections with the community



**LEGADO DAS ÁGUAS**  
RESERVA VOTOKANTIM

2021 ANNUAL REPORT

# LEGADO DAS AGUAS



Reservas Votorantim Ltda.

Legado das Águas 2021 Annual Report

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# LEGADO DAS ÁGUAS AND THE SDGs

All work performed over the past nine years at Legado das Águas has its basic premise of following the Sustainable Development Goals (SDGs), released by the UN in 2015.

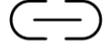
<b>1</b>	no poverty	
<b>2</b>	zero hunger	
<b>3</b>	good health	
<b>4</b>	quality education	
<b>5</b>	gender equality	
<b>6</b>	clean water and sanitation	
<b>7</b>	affordable and clean energy	
<b>8</b>	decent work and economic growth	
<b>9</b>	industry, innovation and infrastructure	
<b>10</b>	reduced inequalities	
<b>11</b>	sustainable cities and communities	
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See our SDGs Progress Report [here](#)

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# RESUMPTION AND OPTIMISM

2021 was a year of significant challenges and learning for Legado das Águas. With the hardening of the Covid-19 pandemic in January, we had to restrict public access again, always following what was permitted by the state government. In April and May, we resumed support for the health system of Vale do Ribeira, as we had done the previous year. Together with Instituto Votorantim and BP (Beneficência Portuguesa) from São Paulo, we participated in a project to train intensive care physicians online to improve assistance in ICUs, collaborating directly to save lives.

As we crossed this second wave, we signed a contract with a TV production company to record a reality show on Legado, which remained closed to the public for two months. Inside, however, we had dozens of people working, including production team members and staff, always maintaining the protocols against contamination by the coronavirus.

This project, which helped financially support Legado during the period of significant restriction to tourism, was only the beginning of our recovery. At that time, with unity and proactivity, our team created strategies to drive new business. We created, for example, a digital marketing campaign focused on potential corporate customers, promoting products and services such as landscaping with native plants and the leasing of space for audiovisual productions.

From the second half of the year, with the advance of vaccination in São Paulo state and the resumption of activities and economic conditions, our business started to walk again. The Center of Biodiversity presented excellent results, supplying Atlantic Forest plants for several kinds of customers, whether individual consumers, great landscaping projects, or ecological restoration in areas of native degraded forest. Pátio Caeté, which opened at the end of 2020, had good results in sales, proving that it was the right decision to set up a place for native plants' trading in São Paulo city.

Another highlight was integrating the Research area with Operation Social and Environmental Education. In this way, scientific knowledge generated during the research accomplished in Legado das Águas was more effective in its application to the development of the territory. The "Programa de Saúde Única", a healthcare project launched in 2021, is a concrete example of this integration. It aims to contribute to the training of health professionals in the municipalities of Vale do Ribeira in São Paulo, a region in which the Reserve is located.

Even more in the social area, we integrate the UN's SDGs into 100% of our operations by publishing a report that measures the effectiveness of our business model, combining priorities of performance, indicators, commitments and business goals with the SDGs.

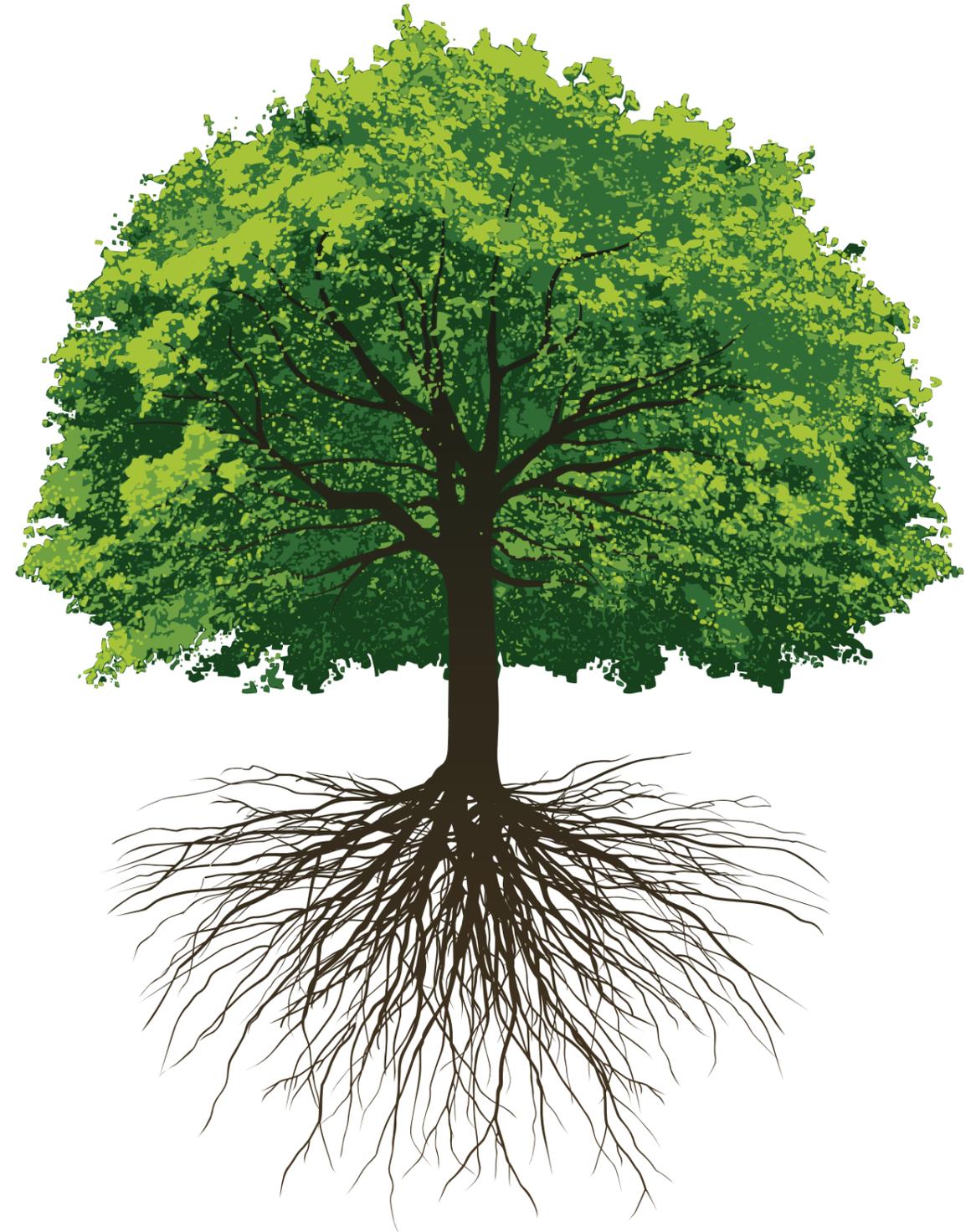
December began with a positive balance. In the last quarter, as soon as it was possible to reopen our installations to public use without limitations, we had total capacity in our inn every weekend. Our big launch in ecotourism was rafting, a much-appreciated activity among tourists and intended for the whole family.

Another progress was implementing business involving environmental compensations for legal Reserve leasing, providing a solution for rural landowners, who, in this model, become partners in Legado das Águas' conservation.

In the end of the year, to bring the significant honor, we moved to a new headquarters in São Paulo and launched the new brand of Reservas Votorantim, the Manager Company of Legado das Águas. In addition to being an investee of Votorantim, Reservas is now present in the market as an emblematic company of environmental solutions based on multiple-land use management. In 2022, we will celebrate our tenth anniversary in a year of intense performance!

David Canassa, director at Reservas Votorantim

Since its foundation in 2012, the private environmental protection area Legado das Águas has grown before our eyes, opening up to the public and community.



At the same time, it took root and formed a solid foundation. On the eve of completing a decade, it is ready to bloom.

image: iStockPhoto.com

# BIODIVERSITY INVOLVES CLIMATE

by David Canassa

In recent years, the climate theme has filled most of the chairs – if not all of them – at conferences around the financial universe and ESG investments (**Environmental, Social and Governance**). This theme is so frequent that we would almost change the acronym ESG for “CSG”, with the climate being the primary concern. Not for nothing. The emergence of the subject is undeniable.

However, the climate crisis is not the only environmental threat. In only 29 years' time, damage to the forest, aquatic ecosystems and biodiversity can generate losses of US\$ 10 trillion to the global economy, as predicted by the **Global Future report by WWF (World Wide Fund for Nature)**. Besides, there are impacts for extractive activities, reduction of natural resources, environmental disasters and zoonosis, such as the pandemic of Covid-19, which ravages the world.

The presence of biodiversity in climate debates is still timid due to the lack of strengthening of a global timetable to include the topic. Some studies demonstrate the role of fauna and flora in mitigating climate change, from forest health to the dispersal of seeds by animals; however, a greater connection is lacking when we think globally.

For example, we have comprehensive data on the financial risks arising from global warming. In this way, we know the importance of avoiding global warming to a maximum of 1.5°C as the models show the impacts above that level. Nevertheless, if biodiversity had a method of monetary comparison, as created with credits of carbon, how much would it be worth on the Stock Exchange? We do not have that answer—yet. However, with a substantial list of data, we know the value of environmental services for ecosystems, mainly for water availability and climate regulation.

Carbon is a topic that, today, many people understand, so it ended up becoming a business. Biodiversity and its context in different ecosystems still are unknown to most people. Much of the world's population lives in cities, away from natural areas and doesn't realize the dependence we have on ecosystem services for the planet to maintain a stock of genes, which provide vitality, health and the functioning of the various natural cycles on which we depend for our existence.

## The role of fauna and flora in climate change mitigation

One of the significant challenges in protecting biodiversity — and mitigating climate change — is responsible land use. In Brazil, for example, the Atlantic Forest resists with 12.5% of its original cover. Investing in the remnants of the biome is the most effective method of conserving biodiversity. However, the investment becomes more attractive when it has a medium and long-term return perspective in addition to being insurance for the future.

Among the examples that can help solve this challenge is Legado das Águas, the largest private Atlantic Forest reserve in Brazil, located in Vale do Ribeira, state of São Paulo. With 31 thousand hectares, 75% of the area is composed of primary forest, a composition that has become a cradle and refuge for rare and endangered species of extinction.

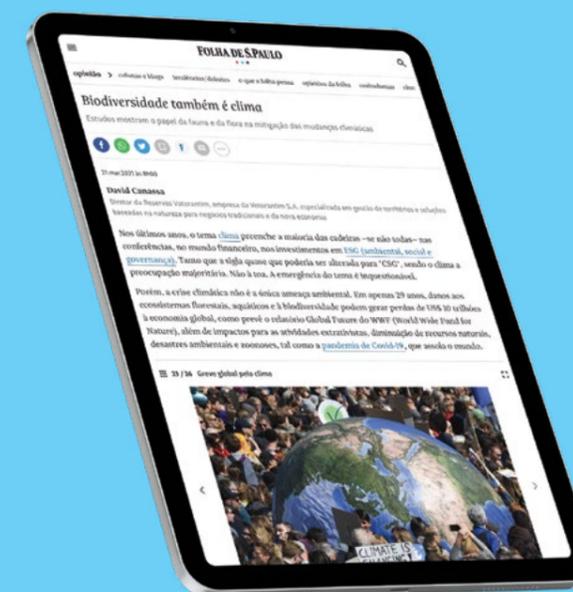
While this territory sounds like a privilege, the responsibility to manage biodiversity present in Legado das Águas shaped the development of a business model that is part of the answer on how to include biodiversity on the ESG economic agenda. In addition, this is the way to broaden the topic's schedule

in search of solutions to climate changes. In nine years of existence, working on transversal fronts of scientific research, plant production of native species and public use (especially eco-tourism), the reserve has demonstrated that it is possible to generate resources with the production of nature. It means the standing forest generates earnings to protect their ecosystems and biodiversity.

The fauna cataloged in Legado das Águas represents 13.5% of all endangered animal species in the biome in Brazil. In flora, the reserve maintains an essential center of biodiversity with a native Atlantic species' nursery. It is an unprecedented initiative in the country, with the production and genetic bank of rare and endangered plants of the native flora destined for reforestation and landscape projects in urban centers. The business model applied to Legado das Águas is not only viable but replicable.

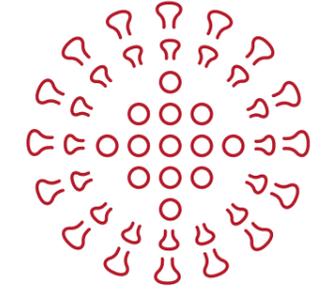
Many worried people ask what we should do when, in fact, we already have workable models of what we can do. When reflecting on the role of ecosystems for human survival, we understand that biodiversity is also climate and needs to take its rightful - and required - place on the climate change agenda. ■

David Canassa is director of Reservas Votorantim. Paper published in Folha de São Paulo on March 21, 2021





# ANOTHER YEAR OF OVERCOMING



**The pandemic has restricted tourism for months, but Legado das Águas territory's leasing has ensured positive results**

The covid-19 pandemic slowed down by the end of 2020 and although vaccination had not yet started in Brazil, there was a prospect of a gradual resumption of economic activities. However, the second wave in early 2021 changed plans on the first day of the year. After the New Year's Eve party, tourists that dawned in the Legado das Águas could no longer participate in group ecotourism activities due to its suspension. Only self-guided trails could have routes from that day.

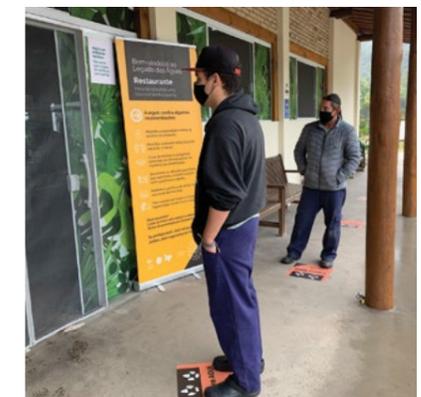
Over the following months, despite never having closed completely, the territory of Legado das Águas operated only between 30% and 70% of its maximum capacity, always according to São Paulo state government guidelines for the tourism sector. The full reopening only took place in September. Throughout the year, whether in periods of minimum or full occupancy, we kept the Covid-19 prevention protocols, under BP (Beneficência Portuguesa) curatorship, with the requirement to use masks (including in activities such as trails and canoeing) to maintain social distancing in public areas and to strengthen hand hygiene.

While it was necessary to operate with reduced guest capacity, the team was looking for opportunities to generate business. The main one was the lease of Legado das Águas to a large international producer for the recording of a reality show. We closed Legado das Águas for public visitation and hosting for two months. The accommodation structure and the restaurant worked exclusively to serve the approximately 200 professionals involved in the show's production, including staff and suppliers. *"The arrival of a new wave of Covid-19 made it difficult to resume business concerning visitation, but the lease for the reality show generated a positive result from a financial point of view for Reserve"*, ponders Aline Taminato, Business Analyst at Reservas Votorantim. To ensure the safety of the production company's professionals and Legado das Águas' employees with Covid-19, we heavily regulated people's access and transit. In addition, we constantly performed tests to detect potential contamination.

Once the complete reopening took place in September, the response from customers was immediate: total capacity for several weekends. *"Demand was pent up. After so long of the pandemic, people were looking to unwind and reconnect with nature"*, says Mendes. In this sense, according to him, the Legado brings together several qualities that make it a unique place: an excellent infrastructure for accommodation and ecotourism activities, a very well preserved forest and the assurance that the protocols to prevent the new coronavirus are strictly followed. As in the previous year, 2021 also required resilience and the ability to overcome. *"With empathy, we understand the look of each visitor who has passed through the Reserve looking for entertainment, safety and connection with the forest. We kept our attention and the search for excellence in service and safety for everyone"*, completes Mendes. ■



During this period, the Legado das Águas team also prepared the Reserve for its reopening, promoted advance ticket sales campaigns for ecotourism activities and showed and maintained all Covid-19 prevention protocols. *"Our Communication team did an essential job, publicizing on our social networks that Legado was still active and waiting for customers to return when possible"*, says William de Souza Mendes, Legado's manager of Public Use, Ecotourism and Sports.



# FACTS 2021

## See some of the main events of the year at Legado das Águas

### LEGADO AT SHIMANO FEST

In 2021, the traditional festival about the world of bicycles, promoted annually by Shimano, occurred online due to the pandemic. William Mendes de Souza, supervisor of Operations, Ecotourism and Sports at Legado das Águas, participated in the event presenting the trails that cross the Reserve's forest and the possibility of using electric mountain bikes, the E-MTBs. These bikes, equipped with batteries, allow even non-athletes to face uphill or long distances, enjoying the ride on Legado with ease and safety.

### WATER PORTRAITS

The NGO Retrato Social makes short documentaries publicizing people and associations that work in social causes, publishing the videos on the internet. In the fifth season, dedicated to the theme "Water", several recordings took place at Legado das Águas. The images and interviews with several collaborators highlight conserving the forest to preserve this natural resource.

You can watch the series with all four episodes on the "Retrato Social" YouTube channel.

## BACK TO THE FOREST

Fifty years after being declared extinct in the Atlantic forests of São Paulo, the orchid *Octomeria estrellensis* came back to the Legado das Águas forest within a conservation program that reproduces endangered species for propagation in the biome.

The research on this species resulted from a partnership between Legado das Águas and biologist Luciano Zandoná, responsible for structuring the orchid conservation program in the Reserve and author of the rediscovery of *Octomeria estrellensis*, in 2017. In this work, the *in vitro* reproduction of the seedlings was overseen by Orquidário Colibri. In July 2021, after more than three years of study and a reproduction period, the seedlings returned to the trails of the Reserve.

The rediscovery of this species allowed the reproduction of about a thousand seedlings, which may make it possible to remove the name of this orchid from the list of extinct species and propagate it to other areas of forest. David Canassa, director of Reservas Votorantim, explains that laboratory reproduction and reinsertion allow the dissemination of the species, making possible its long-term existence. "We are also studying the possibility of producing and selling orchids from the Atlantic Forest, which generates a new inclusive production chain and discourages illegal harvesting in the forest", says Canassa.



photo: Miguel Flores

## ONLINE SUSTAINABILITY

In celebration of the nine years of Legado das Águas and the Environment Week, the webinar **Por um Futuro mais sustentável** (For a more sustainable Future) was held in June, with five meetings broadcast on Legado's YouTube channel. The initiative brought together several guests to talk about the different aspects of sustainability and conservation of the Atlantic Forest.

See the topics covered and access the videos:

### Sustainable gastronomy: from bush to plate

Chat about the importance of maintaining healthy eating habits and their influence on our quality of life.

### Garden at home: planting the future

A conversation about the importance of conserving forests and their relationship to human health, myths and truths of landscaping with native plants and tips on how to grow plants at home.

### Sustainable habits

Vegan, plastic-free, natural products: the importance for the environment and the scope of this market. Tips for those looking to start or improve a healthier lifestyle.

### Bicycles: transport, health and sustainability

Chat about the importance of the modality for the well-being of users and the significant increase in this transport during pandemic times.

### Influence the world by changing your spirit

Social networks as a tool in forming citizens aware of their responsibilities and their role in society to preserve natural resources.





## LEGADO IN PODCASTS

The *ESG from A to Z* podcast, from Exame magazine, published in July the episode **"How Votorantim profits by protecting nature"**, addressing the sustainability trajectory of Votorantim S.A. and their companies. There were interviews with David Canassa, director of Reservas Votorantim and Cloves Carvalho, director-president of Instituto Votorantim. In this conversation, one of the highlights was Reservas Votorantim's business model. Social networks as a tool in forming citizens aware of their responsibilities and their role in society to preserve natural resources.

The episode is available [here](#).



On VotoCast, produced by Votorantim, the episode **"Biodiversity and Public Use of Private Areas"** discussed the valorization of the standing forest and its various possibilities for generating business for the new economy. In the program, conducted by Deise Almeida and Kamilla Barboza, responsible for communication at Votorantim S.A. and Reservas Votorantim, respectively, were present David Canassa and Paulo Groke, superintendent director of Instituto Ecofuturo, responsible for managing the Parque das Neblinas, in Mogi das Cruzes (SP).

Listen to the episode [here](#).

## DIGITAL GASTRONOMY

To enhance and disseminate regional culture and gastronomy, Legado das Águas published a catalog with typical recipes from Vale do Ribeira. With 18 recipes created by 13 cooks, the record is the result of the **"Trocas Criativas"** project, an initiative of Legado das Águas in partnership with Sebrae, also "Dá Gosto Ser do Ribeira" and "Viva o Vale" movements.

The project brought together several professionals for a cycle of presentations, which was about topics such as the historical and cultural rescue of the Vale do Ribeira, contextualizing the importance of gastronomy in local identity, nutrition and menu engineering and creative gastronomy. At the end of the cycle, the project participants in Vale's tourism and gastronomy sectors presented their recipes to compose the catalog.

Prepared with typical ingredients of the region, recipes such as green taioba broth, banana ceviche, or yam brigadeiro can help other entrepreneurs in the segment to diversify and customize their menus.

Access the catalog [here](#).



## CLIMATE LEADER

The April edition of *Época Negócios* magazine selected **100 innovative climate leaders**, 50 Brazilians and 50 global, who help create effective ways to mobilize and direct resources to combat climate change.

**David Canassa, director of Reservas Votorantim, was included in this list** for his trajectory in the area of sustainability and his participation in the foundation and growth of Legado das Águas and Reservas Votorantim, leading one of the essential business models of the new economy in the country.

## CONNECTED ART

Artists from Vale do Ribeira won a digital and interactive platform to promote their work to art consumers across the country. The portal **"Roteiros da Cultura Brasileira"**, which went on air in March, brings together the work of 60 professionals from 19 municipalities in the region. The initiative is part of the "Roteiros da Cultura Brasileira" project, carried out by Instituto Meio with support from Legado das Águas and Instituto Votorantim and financed through the Culture Incentive Law.

The platform brings together different artistic expressions, such as professionals in Crafts, Music, Dramatic Arts, Visual Arts, Audiovisual, Gastronomy, Literature and Design. The project also promoted training focused on entrepreneurship and communication, aiming to prepare artists to identify and take advantage of opportunities in the virtual scenario. The platform contributes to the socioeconomic and cultural development of the municipalities, valuing the economic and artistic vocations of the region.

## EDUCATIONAL PARTNERSHIP

Legado das Águas started a partnership with Floresta Week, a producer of children's series that address issues of education and the appreciation of nature. At each end of the recording season, they will plant native species, helping to restore the Atlantic Forest. In the first action, Legado contributed with seedlings, area and technical support to plant 100 fruit trees in the Atlantic Forest.



## RECOVERY OF THE MINI-PANTANAL

Legado das Águas and Fundação Caterpillar, together with the international NGO One Tree Planted, implemented a restoration project in the rural area of Piracicaba, in São Paulo. It is an area of great ecological relevance called Tanquan, considered the "Pantaninho Paulista" for being floodable and attracting great diversity of species, especially birds. The project's objective is to restore the natural environment close to the original forest, which is currently degraded.

This partnership resulted in the planting of around 3,200 native Atlantic Forest seedlings from local nurseries. For two years, the Legado team will be responsible for maintaining the area and ensuring the seedlings' proper growth until they are more robust than before. The initiative is part of the Caterpillar Foundation's **"Start with a Tree"** campaign, integrating socio-environmental projects in different regions around the world where Caterpillar operates. ■



## MEDIA CONTENTS

### ALL OVER BRAZIL

**559** PUBLICATIONS

**539** ON WEBSITES **12** IN THE PRESS

**7** ON TV **1** ON THE RADIO

VALUATION  
**BRL 10,181,151.00**

### REGIONAL

**142** ARTICLES PUBLISHED

**126** ON WEBSITES **11** IN THE PRESS

**4** ON TV **1** ON RADIO

VALUATION  
**R\$ 4,411,678.29**

### SOCIAL MEDIA



**456** POSTS

**37,965** INTERACTIONS

**175,622** FOLLOWERS



**473** POSTS

**164,166** INTERACTIONS

**35,426** FOLLOWERS

# NATURE-BASED SOLUTIONS

## From setting for filming to ecological restoration, grows diversity of businesses in Legado das Águas

Reservas Votorantim's business model follows the concept of multiple-land use management, i.e., the various achievable activities in an area of preserved forest. In the early years of Legado das Águas, the ecotourism infrastructure has developed, with the renovation of old facilities to transform them into an inn and restaurant and the creation of trails for walking and cycling. At the same time, we constantly improved monitoring and security. By 2021, the potential of other economic activities began to become a reality.

*"Thinking about multiple-land use management means having several businesses in the same location, serving customers with different characteristics and perspectives",* explains David Canassa, director of Reservas Votorantim. In the case of ecotourism, the relationship with the public is similar to retail, with a short-term service provision, as visitors spend a few days in the place. This same structure available to tourists serves as a platform for another business dimension, serving corporate customers as a TV production company looking for a location in a conserved forest. In this context, relationships with customers are more lasting, as the producer can return to Legado whenever it needs this scenario.

The business aimed at corporate customers has grown steadily in the last two years. Space leasing, for example, had an excellent performance in 2021 due to recording a reality show for two months and leasing and image capture for "Auto Esporte", a TV show. Thanks to the unique characteristics of Legado das Águas, the potential to serve customers who seek the forest as a backdrop is enormous. *"The fact that it is a private reserve allows for greater flexibility for customizing services about other natural areas",* says Cicero de Melo Jr., Business coordinator at Reservas Votorantim. *"Another differential is with services, as we can offer the complete package in the lease, including food, accommodation and specialized labor to accompany the tenants."*

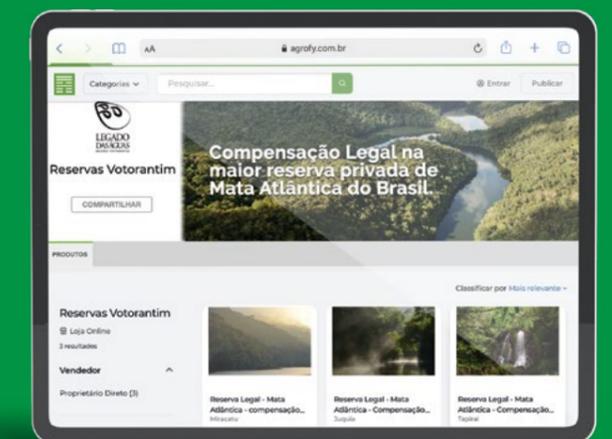


## LEGAL RESERVE GOES FORWARD

By the end of 2022, rural property owners who need to adapt to environmental protection legislation must submit an **Environmental Regularization Plan (PRA)**, defining how they will restore the native forest on their property. One of the options is to compensate by leasing an area of native vegetation on another property, a business model proposed by Reservas Votorantim in Legado das Águas.

In 2021, the signing of the first Legal Reserve contract took place in Legado das Águas for the compensation of 42 hectares. It was just the first step in a market with great potential. *"The environmental compensation market is in consolidation",* says David Canassa, director of Reservas Votorantim. In 2022, he believes, as the economy grows, there should be more demands for environmental offsets.

The Business area sought dissemination strategies to reach rural producers interested in the model proposed by Legado das Águas. One of the actions was to insert the Legal Reserve service into the Agrofy virtual platform, which offers products and services aimed at rural consumers. The other was the partnership's renewal with Canoeste (an association of sugarcane planters in São Paulo), intending to strengthen contact with these producers.





In 2021, the Biodiversity Center established itself as an example in multiple business possibilities. Currently, the plant production can serve both individual customers and medium and large-scale landscaping and ecological restoration projects (planting with native plants) (see more on page 20). Landscaping with native plants gained significant momentum with Pátio Caeté in São Paulo, operated in partnership with Giovanna Paisagismo (see more on page 22). One of the city's major real estate projects, called O Parque, by the developer Gamaro, which brings together residential and commercial buildings, will have a garden made with plants from the Atlantic Forest produced in Legado das Águas.

Also using the plants of the Biodiversity Center, Legado has "Plantando o Amanhã" in its portfolio, which is a product aimed at companies, schools, or volunteer groups. *"The project's objective is to raise awareness and encourage environmental engagement from school groups to company teams, reaching a wide range of audiences"*, says Cicero. In this activity, the group's planting of native Atlantic Forest species seedlings can occur at Legado das Águas, in public parks, schools, or even within a company. *"This is not just a conventional planting activity, but an opportunity to reconnect people with nature, through teamwork and reflection on environmental and sustainability issues"*, ponders Cicero.

Talking to the corporate audience requires different channels than Legado visitors, such as social networks. In 2021, the Business and Marketing and Communications teams defined a digital marketing strategy to drive three products: **"Leasing space"**, **"Landscape with Natives"** and **"Planting the future"**. Advertisements on Google and Facebook direct users to landing pages created to present the products and potential contact customers. We advertised each product to a different audience. For example, in "Space Lease", the focus was on advertising agencies, photographers, or video production professionals. At the same time, "Landscape with Natives" is a product aimed at landscape designers or people interested in the subject.



Legado das Águas itself has become a replicable business model. Thus, it is starting to provide business-consulting services for the use of natural areas. *"Just as we did at the beginning of Legado das Águas, we created business plans based on multiple-land use management, designing possibilities for different types of companies that own forest areas and want to combine conservation with economic activities"*, explains David Canassa.

nexa



The first project in this line is **Vazantes Mineiras**, made for **Nexa**, a company that is one of the founders of Legado. In the city of Vazante, in Minas Gerais, Nexa operates an underground zinc mine, in which there is an area of 3 thousand hectares balanced with native forest and pastures. The objective is to put a plan in motion to develop new production chains. *"We set up a project to be developed during the operation of the mine, generating opportunities for the municipality and company, both in terms of new businesses and increasing knowledge about the biome"*, says David Canassa. According to Cicero, *"consulting for the diagnosis and implementation of multiple-land use management has great potential for applying Legado das Águas business model in other natural areas"*. ■



## IMMERSION IN ECOTOURISM

A cozy and well-equipped house, floating in the middle of a dam on the Juquiá River, surrounded by a preserved Atlantic Forest. All this with the security of being inside a private nature reserve, constantly monitored. In times of pandemic and social isolation, this describes paradise – or the new accommodation option at Legado das Águas. Legado created it in partnership with Altar, a company that builds self-sustaining homes amid nature.

With 50m<sup>2</sup> of total area, including the deck, the house accommodates 3 people. The water comes from the dam itself, becoming potable after passing through a robust filtering system, a marine biodigester treats the sewage system and the energy comes from solar panels. The access is by boat from the edge of the dam and guests can either bring food to prepare their meals or enjoy the Legado's restaurant.

From inside the house, it is only possible to see water and forest in an experience of total immersion in the natural environment. *"The trend in tourism is having unique accommodations, in isolation, so that people can connect with the place and perceive the surrounding nature"*, says architect and urban planner Pedro Lira, one of Altar's partners. The house was in great demand in the summer of 21/22, with total capacity on all weekends.



# A FOREST FACTORY

## Biodiversity Center consolidates itself as a producer of native species for landscaping and ecological restoration

**B**efore reaching its destination, a plant produced at Legado das Águas is born in the **Biodiversity Center (CB)** and stays there while it is only a few centimeters tall. After this phase, it grows in pots until it reaches sufficient size and strength to go to its final home, whether a visitor's house, a landscaping project, or ecological restoration (recomposition of native vegetation).

The most extended plant development period takes place in the Porto Raso yard, a space within the Reserve that had to expand in 2021 to meet the increased production. *"The Biodiversity Center is generating excellent results. Our idea of bringing the Atlantic Forest back to the city is growing faster than we imagined in our business plans"*, says David Canassa, director of Reservas Votorantim. Seen from afar, with the immense variety of species and sizes of plants, Porto Raso demonstrates all the diversity and beauty of the growth stages of a forest.

Five years after starting operations at the CB, we overcame many difficulties, such as the deprivation of protocols for the reproduction of Atlantic Forest native species and the lack of references on market demand. *"This year, it became clearer to our team which plants are of greatest commercial interest, how they should be available to customers and our potential to*

*supply the market"*, says Maria Angélica Szymanski de Toledo coordinator of the Center of Biodiversity of Legado. *"We identified species with ornamental, economic and conservation potential, combining the expansion of biodiversity with urban landscaping and ecosystem services promoted by plants, such as attracting birds, urban pest control, thermal comfort and soil drainage, among other benefits"*.

By the end of 2021, we had produced about 75,000 plants. Pátio Caeté opened at the end of 2020 in São Paulo city, driving the increase in sales (see report on page 22). With the growing demand for native species, Legado das Águas should have, as of 2022, new partners for the distribution of plants in other regions of the country, mainly in urban centers.

Another business aspect that has advanced at the Biodiversity Center is bioprospecting, carried out in partnership with companies interested in discovering substances from the forest used as raw material for new products, especially the manufacturers of aromas and fragrances. The first assets produced from the Legado das Águas forest may appear in 2022. However, this line of development still faces many challenges and should only generate results in the coming years.



Porto Raso yard

## FOREST IN RECONSTRUCTION

The Biodiversity Center's ecological restoration area took its first steps in 2020 when it carried out its first project. Made for Votorantim Energia in compliance with a Term of Commitment for Environmental Recovery (TCRA), seedlings and trees were planted on 16 hectares around dams in Votorantim, Juquitiba and Juquiã, in São Paulo state.

In 2021, significant progress occurred with implementing the 164-hectare forest restoration project in Parque Estadual Jurupará, adjacent to the Legado das Águas, in partnership with the NGO Iniciativa Verde. This project is part of **"Programa Nascentes"** by the Secretariat of Infrastructure and Environment of São Paulo state, aiming to optimize restoration projects' public and private investments.

Over four years, the area will receive 30,000 tree seedlings, covering 60 species. Different methodologies will take place to recover the forest, such as removing invasive exotic species, enrichment of the forest with species such as Juçara Palm, direct planting of seedlings and sowing of native species.

In Jurupará, a voluntary ecological restoration project is also underway, promoted by Nexway Eficiência in partnership with Legado das Águas. In an area of the park where it was necessary to carry out forest restoration, the planting of a thousand seedlings of native species took place. The partnership will continue in the coming years, with a forecast of recomposing at least 3 hectares to plant 25,000 seedlings.

## JUÇARA PALM IS BACK HOME

A target of illegal exploitation for palm heart extraction, the Juçara palm (*Euterpe edulis*), a native species and symbol of the Atlantic Forest, is at risk of extinction. In an initiative to help preserve the species, Legado das Águas implemented a project to repopulate its territory with Juçara.

In the first phase, already underway, we planted 400 seedlings of the species, in addition to the preliminary mapping of the region to define areas that will receive new seedlings. We will not extract the palm heart for some years when the trees are grown. For pulp production, the idea is to harvest part of the Juçara fruits – little coconuts similar to açai. The objective is that in the future, with the repopulation, including areas outside the Legado and support for a processing center, local communities will have a commercial activity based on harvesting the fruits of preserved trees. In this way, they also help conserve the forest and the species of high ecological relevance, as it is a food source for several species of the local fauna. ■



# BRAZILIAN LANDSCAPING

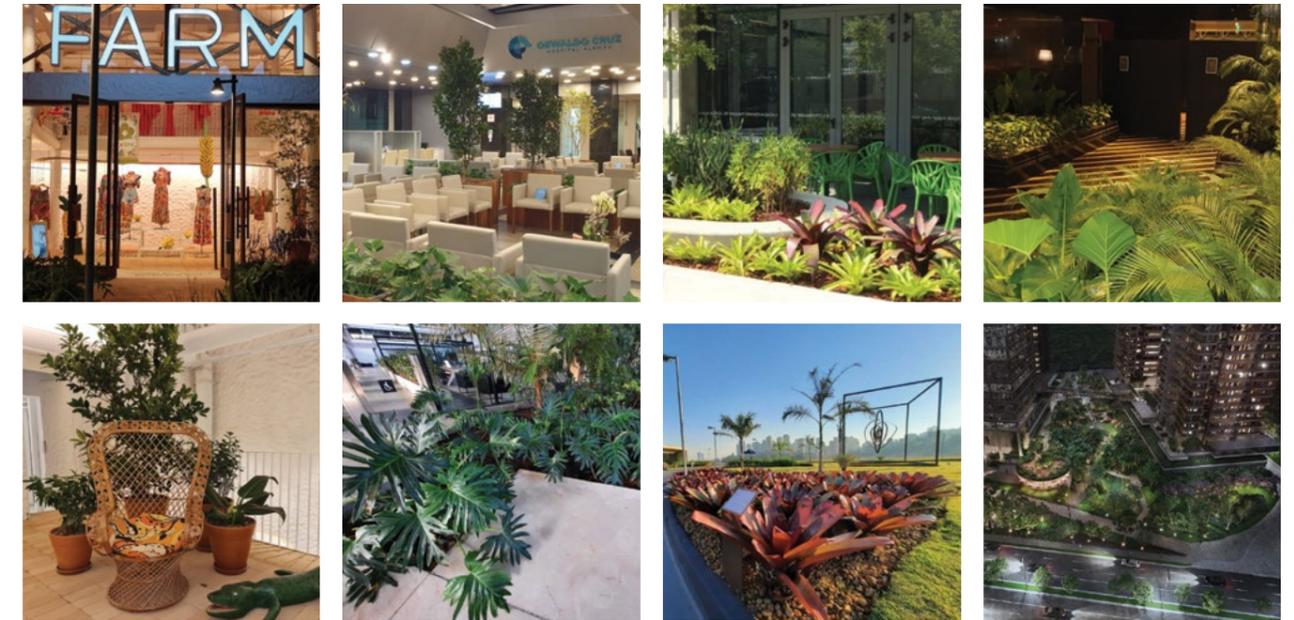
## Pátio Caeté celebrates one year with growth prospects



Although opened amid the difficulties caused by the Covid-19 pandemic in December 2020, Pátio Caeté successfully fulfilled its purpose of rescuing the use of native species of Brazilian biomes in urban environments. Acting as a distribution center for Atlantic Forest plants produced in Legado das Águas, Reservas Votorantim's newest business participated in almost 20 large-scale landscaping projects and totaled around R\$500,000 in sales.

Located in Vila Leopoldina, in the West Zone of São Paulo city, operated and curated by Giovanna Paisagismo, Caeté brings together seedling suppliers from other Brazilian biomes, especially the Amazon, Cerrado and Caatinga. Offering several ornamental species (trees, shrubs, herbs and forages), fruit trees and ecological restoration can serve from large projects to individual unit purchases.

Taking Brazilian plants back to big cities is a mission, as the use of native species in landscaping is still minimal. More than 90% of the plants used in urban landscaping are foreign in Brazil. For botanist Ricardo Cardim, one of the pioneers in using native plants in landscaping, Pátio Caeté is a turning point. "We are making history with this work that Reservas Votorantim has led all partners to change Brazilian landscaping", says Cardim, one of the links in this chain of partnerships.



Projects with plants from Pátio Caeté

Cardim defines the work of his office as multifunctional or sustainable landscaping: "the concern is not only with beauty, it is also with the entire framework of needs that a planned green area project has to offer people, such as reducing the temperature, increasing of air humidity, shelter for avifauna and increase in biodiversity". About exotic plants (coming from foreign biomes), the native ones only have advantages: they grow faster, consume less water and resist climatic variations and natural enemies better because they evolved in that territory.

Although they are still a minority, Brazilian plants have already extrapolated the market niche. "Today, native biodiversity is a reality and is accepted by several sectors. We have 100 large projects in our office alone in progress", says Ricardo Cardim. One of them is the real estate project O Parque, by the developer Gamaro, which is being built in the Brooklin district in São Paulo city. With residential and commercial areas, it will have 10,000 m<sup>2</sup> of the green space made with 35,000 natives of the Atlantic Forest plants and provided by the Biodiversity Center of Legado das Águas, through the Pátio Caeté. The landscaping project was inspired by Legado das Águas, including a watercourse that crosses the central garden.

According to David Canassa, director of Reservas Votorantim, the Biodiversity Center and Pátio Caeté are increasingly prepared to serve this market with growing demand for native species. "With Caeté, we managed to be competitive and bring the public closer to plants that are unknown to most people, despite being from our Atlantic Forest", he says. Regina de Lucca, from Giovanna Paisagismo, endorses this eyesight. "The advantage of Pátio Caeté is that we can follow trends in the landscaping market, as we have a wide variety of species produced in Legado das Águas and other nurseries. In addition, we carry out ongoing studies to produce species with potential for landscaping", she explains.

The benefits of returning the native forest to the urban environment are evident even before the plants leave Pátio Caeté. Installed on the grounds of an old factory, with renovations made from the reuse of structures and materials such as wood and iron, Caeté became a wooded space in the heart of the city. Regina says, "there are so many plants that even the birds are reappearing, some of which we hadn't seen in São Paulo city for a long time".

Learn more about Pátio Caeté [here](#)



# NEW ACTIVITIES IN TOUCH WITH THE FOREST

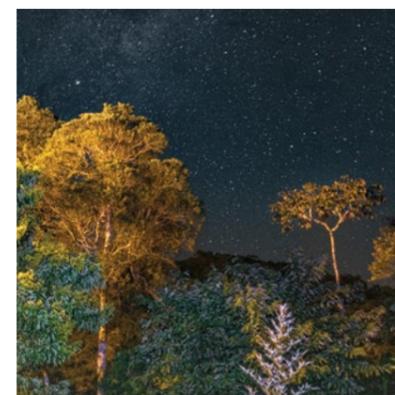
## Reduction of restrictions imposed by the pandemic boost ecotourism



Since opening its doors to the general public in April 2019, Legado das Águas has consolidated itself as an essential ecotourism destination in Brazil. This successful trajectory took place despite the immense difficulties brought about by the Covid-19 pandemic, which, as of March 2020, imposed several limitations on all sectors of the economy, especially the provision of services. *"We have not yet been able to complete a cycle of 12 consecutive months of operating in ecotourism. But we were on an upward curve until we were interrupted by the pandemic"*, says William Mendes de Souza, Operations, Ecotourism and Sports supervisor at Legado das Águas.

With the vaccination advancement in Brazil and the end of restrictions on services provision, the scenario becomes positive again. After two years of the pandemic, the demand of tourists for isolated places in contact with nature and with good infrastructure has increased. Legado has improved its operations and its portfolio of activities in this scenario, offering visitors new immersion experiences in the Atlantic Forest.

The biggest highlight in the ecotourism program was the launch of rafting, an activity that combines adventure with the contemplation of nature. The tour, lasting 3 hours, takes place on a stretch of the Juquiá River between the Fumaça and Barra dams. With calm waters and light rapids, it is ideal for the whole family, as it allows the participation of children from 6 years old. The activity was designed in partnership with Canoar, a national reference for implementing rafting routes and operations. José Pupo from Canoar says that the goal was to have a safe rafting trip accessible to as many people as possible. *"The water is spotless and transparent, with small rapids. The strong point is to observe the primary riparian forest, with beautiful trees. The Juquiá River forms a deep valley in this stretch and the Atlantic Forest surrounds us"*, describes Pupo.



Midway, you reach the high point of the emotion of the tour, with the crossing of a rapid or medium degree of difficulty. At this point, safety precautions are evident in the implementation of the entire operation. *"We use large boats, with a capacity for eight people, but the maximum capacity allowed is six people, one instructor and five tourists. Thus, the probability of someone hitting an oar or another participant is much lower"*, explains José Pupo. In addition to Canoar, another partner in making rafting viable is Fundação Florestal, which manages the Jurupará State Park, as the initial part of the route is within the limits of this park.

One of the highly successful revamped ecotourism attractions was the Astro Experience, in which a group of visitors observes the night sky accompanied by a scientist. Starting in late 2021, each issue of Astro Experience covers a different topic, such as the history of astronomy, black holes, or the theory of relativity. Astrophysicist Jonathan Quartuccio, from the Research and Science Teaching Group at Unicamp (State University of Campinas), leads the introductory lecture on the topic and observation with a telescope. Suppose the sky is cloudy and does not allow direct observation. In that case, Quartuccio takes the group to the Legado auditorium and uses the Space Engine software, a simulator that helps visit other planets and galaxies.

Another new activity, aimed at the whole family, provides a unique experience in the woods. The Nocturnal Immersion is a walk along the Cambuci trail carried out at night when many animals are awake. With lanterns attached to their heads (headlamps), visitors can see the movement of insects, birds and even some mammals at night – and hear the sounds of the forest in the dark. ■

# BIRDWATCHERS' PARADISE

## Legado das Águas can become an important birdwatching center

**B**irdwatching is one of the activities with the most significant growth potential in the ecotourism of Legado das Águas. Reserve brings together several attributes that attract birders – as the birdwatchers like to be called. There is an excellent structure to serve visitors and the various endemic species, that is, that only exist in the Atlantic Forest. *"Legado das Águas is already a powerhouse for birdwatching and tends to grow much more"*, says Demis Bucci, a birder for almost two decades and a birdwatching guide since 2012.

Bucci and the first group that took to the Reserve had a gala premiere. *"We saw several endemic Brazilian species, many of them threatened. We also saw the choquinha-pequena, a scarce species sought after by birdwatchers, but which is quite common in Legado"*, he says. Choquinha-pequena (*Myrmotherula minor*) is one of the keystone species that observers often look for.

296 species have already been recorded in Legado das Águas. Bucci calculates that, in a week, it is possible that a birder (who stays and walks through several trails in the Reserve) can see all of them or even more. *"Legado is part of an Atlantic Forest corridor that includes several state parks, such as Carlos Botelho, Jurupará and Intervalos"*, explains. *"I believe it is possible to identify 400 species because all endemic species of Atlantic Forest can appear there, even very rare ones."*

Several actions are already underway for Legado das Águas to be one of the leading destinations for birdwatching in a few years. *"One of the main activities is registering and approving local tourist guides to work in the Legado, with training and qualification as birdwatching guides"*, says William Mendes de Souza, Legado's Operations, Ecotourism and Sports supervisor. For international tourists, we registered three bilingual guides and ornithologists able to assist foreign visitors.

Also, in 2021, there was participation in two major events in the sector, one of them the Avistar at UC, with online meetings promoted by the AvistarBrasil channel on YouTube, famous for promoting birdwatching in Unidades de Conservação managed by São Paulo's Fundação Florestal. Watch the video with a presentation about Legado [here](#).

On October 9, Legado das Águas was one of the locations where took place the "Big Day", an event that occurs all over the world intending to register as many bird species as possible in 24 hours. The eBird mobile application controls the counts and it can include information such as species, city and country of registration. Scientists around the world share this info to help conserve and protect birds. In the 2021 edition, nearly 33,000 birdwatchers worldwide participated, reporting 7,269 species sighted in 195 countries.

photos: Demis Bucci



1. Sabiá-pimenta  
- *Carpornis melanocephala*
2. Choquinha-pequena  
- *Myrmotherula minor*
3. Maria-pequena  
- *Phylloscartes sylviolus*
4. Bacurau-ocelado  
- *Nyctiphrynus ocellatus*
5. Caneleiro  
- *Pachyrhamphus castaneus*
6. Bem-te-vi-pequeno  
- *Conopias trivirgatus*

Some simple actions can also pique people's interest in bird watching. In the Legado das Águas restaurant, leaflets with photos and descriptions of the most common species to be seen were placed. Tourists can recognize some of them very close by, on the Cambuci Trail, the easiest to travel, with long stretches of wooden walkways making it easy to walk. Often, visitors won't even have to get up from the table, as the seven-colored sairas and toucans are regulars in the surrounding trees. ■



Demis Bucci with birders' group at Legado

## IDEAL PLACE

### FEATURES OF A GOOD PLACE FOR BIRDWATCHING:

- Key birds: rare species that attract birders. Legado has many endemic, rare and endangered species;
- Location with multiple geography, different altitudes and mountainous topography. The altitude at Legado ranges from 50 to 700 meters above sea level. Closed forests and open forests also contribute to a wide variety;
- Good hosting structure;
- Good meal structure, including meeting different schedules, as observers leave for trails very early;
- Safety: Legado offers total security, allowing observers to park their cars in different places along the road that crosses Reserve and undisturbedly use their equipment;
- Support staff trained to assist birdwatchers, usually local residents who know the birds, the places and times of the year when they appear.



# EDUCATIONAL ECOTOURISM

**Child Expedition  
combines walks in the  
forest with learning  
about environmental  
conservation**

The Environmental Education area of Legado das Águas has always sought to focus on actions with local communities and schools in the municipalities where the Reserve is located. At the same time, the Reserve created pedagogical itineraries to study the environment, transforming the Legado forest into an open-air classroom, receiving more than 500 students from different schools and other institutions.

Thus, offering an activity primarily aimed at children who attend Legado was consolidated and became a new product in 2021: the Child Expedition. The project's objective is to encourage children to reflect on the importance of protecting the environment, combining contact with nature and recreational activities with the celebration of environmental commemorative dates. Aimed at children from 6 to 11 years old, Child Expeditions include trails, waterfall baths, boat trips and games, among other activities.

Each edition works on the themes according to the environmental calendar and a particular schedule. In September, for example, the theme was "Dia da Árvore", celebrated on the 21st. The children were able to walk along trails and bathe in waterfalls while learning, in practice, the stages of plant development and the importance of trees for the conservation of all species. In October, the expedition focused on "Dia da Criança".

In November, remembering the "Dia Nacional da Onça-Pintada", on the 27th, the small participants learned about the techniques of recording images of animals in the forest with the Onçafari team. For 2022, for example, itineraries are planned for "Dia Mundial da Água" in March and for "Dia Mundial do Meio Ambiente", celebrated on June 5. The Child Expeditions calendar is published on the Legado das Águas website. Everybody can purchase tickets on this website. The activities have an estimated duration of 7 hours, allowing groups of up to 15 people.



Daniela Gerdenits, the coordinator of Partnerships and Social Responsibility at Reservas Votorantim, highlights the importance of environmental awareness in childhood. *"The appeal for guidelines related to the environment is increasingly present and we want to contribute to forming people who have this type of conscience. For this, it is important to stimulate children in the most appropriate way through games, recreational activities"*, she says. The benefits of children's actions on the Child Expedition, according to Daniela, go far beyond learning. *"Recreation serves not only to promote knowledge but also to encourage socialization, teamwork, self-knowledge and creativity, among other skills"*, says the coordinator.

For Aline Taminato, Business Analyst at Reservas Votorantim, Child Expedition diversifies Legado's portfolio of activities, in addition to stimulating the local economy. *"Fostering tourism in the region is essential for economic recovery. Combining ecotourism and environmental education can broaden the profile of the public we serve and, consequently, increase visitation to the Legado"*, she says. In addition, customers who seek this activity are usually families, who end up consuming other services, such as overnight stays at the inn and meals at the restaurant. In 2022, with the return of face-to-face activities in schools, the idea is to serve more groups of students. ■

# THE NEW PERSPECTIVE OF RESEARCH

**Purpose is to share knowledge to conserve forests and contribute to the territory's development**

Scientific research at Legado das Águas was born almost at the same time as the Reserve. Since 2014, several partners have developed projects that have generated remarkable results both in the history of Legado and in research on the Atlantic Forest. In the highly conserved forest of the Legado das Águas, for example, very rare species of fauna and flora were recorded, as well as a large population of muraqui-do-sul (*Brachyteles arachnoides*), the largest non-human primate in Americas, classified as critically endangered. Over almost a decade, these projects allowed the cataloging of hundreds of species of animals and plants (see charts) and paved the way for new directions in scientific research.

From 2020 onwards, it was possible to start a new and desired stage - to implement applied projects for research purposes, developed by the Legado das Águas team itself. One of them investigates the success rate in the rescue and relocation of orchids found in fallen trees, a practice established during the execution of the project "Levantamento de Orquídeas do Legado das Águas" between 2015 and 2019. Now, these orchids, placed in healthy trees, are being monitored, evaluating some crucial variables in the relocation process to

guarantee the survival of the plants. Also, in 2020, Legado das Águas became part of the Monitoring Network of "Programa Grandes Mamíferos da Serra do Mar", a large-scale project that brings together several partners, covers 17,000 km<sup>2</sup> of Atlantic Forest and aims to generate data to support conservation plans for jaguar (*Panthera onca*), tapir (*Tapirus terrestris*) and peccary (*Tayassu pecari*).

In 2021, a new and important step was taken with the integration of the Research area into the Partnership and Social Responsibility Coordination, which encompasses the areas of Social Action and Environmental Education. "This change meets the purpose of the Research area: to generate shared value through projects that promote the construction of scientific knowledge about the Atlantic Forest, enabling this knowledge to be applied to the development of the territory, business strategy and conservation of the forest", explains Gabriel Gade Mesquita, research analyst at Legado das Águas.

This path began to be followed in practice with the creation of the Research, Development and Innovation Committee, which focused on engaging all areas of the Legado in the development of research and applied projects. With strategies

increasingly integrated into Social Action and Environmental Education, the long-term objective is, based on the scientific knowledge originated in Legado das Águas, to contribute to the socio-environmental transformation of Vale do Ribeira. An important action in this regard was the start of monitoring the Research area through indicators linked to the United Nations (UN) Sustainable Development Goals (SDGs).

Also, in 2021, the Fauna Monitoring Program (see more on page 34) and the Scientific Tourism Program were implemented, dedicated to enabling actions related to scientific research, enabling new roots of resources to increase the resilience of these projects. In this Program, Legado das Águas will offer its structure for partner scientists to carry out courses, workshops, lectures and other field activities, offering ecotourists interested in science an immersion in the forest with ease and safety.

Among the actions initiated in 2021, the "One Health Program" is the most emblematic project, in which the new focus of scientific research is materialized in actions. The Program (see more on page 32) is an example of how the integrated work between researchers and municipal health agents contributes to forest conservation



## INVESTIGATED FOREST

History of research and partners who worked on Legado das Águas:

- **2014** Top of the chain predators  
**Pró-Carnívoros**
- **2015** Survey of orchids  
**Zandoná Conservação**
- **2016** Survey of muraquis-do-sul  
**Pró-muriqui**  
Tapir monitoring  
**Instituto Manacá**  
Survey of butterflies  
**Sustentar**  
Birdwatching  
**Sustentar**  
Survey of fishes  
**Proeco**
- **2017** Zoonosis program ●  
**UNISA**
- **2018** Plasmodium biodiversity ●  
**Fundação ABC**  
Herpetofauna survey ●  
**Instituto Butantan**
- **2019** Mycorrhizal fungi  
**UNESP**
- **2020** Bird feeder impact  
**Instituto Manacá**  
Stream fish ●  
**UNISA**  
Olho-de-boi productivity  
**Legado das Águas**  
Olho-de-boi seed plague  
**Legado das Águas**  
Orchid's relocation ●  
**Legado das Águas**  
Large Mammals from Serra do Mar ●  
**Rede de Monitoramento**  
Jaguar monitoring ●  
**Onçafari**

● ongoing projects

## FEATURED DISCOVERIES

Registered species:

- 70 mammals** 
- 296 avifauna** 
- 67 herpetofauna** 
- 54 ichthyofauna** 
- 322 butterflies** 
- 723 plants** 
- 233 orchids** 



Rare record of the butterfly *Prepona deiphile deiphile*, a very rare species that had been seen only twice in the State of São Paulo in the 1950s and 2000s;



Rediscovery of *Octomeria estrellensis*, an orchid considered extinct;



*Godartiana byses* butterfly, an extremely rare species, recorded for the first time in the state of São Paulo;



Record of the first 2 specimens of albino tapir in the wild;



Recognition of Legado das Águas as an **Outpost of the Atlantic Forest Biosphere Reserve**;



Third largest population group of **muraquis-do-sul** identified in Legado das Águas, with 100 individuals of the species, making the area recognized by the **IUCN** as a priority for the conservation of this primate;



Discovery of a new species of orchid, named *Lepanthopsis legadensis* in honor of Legado, where it was identified.

# HUMAN, ENVIRONMENTAL AND ANIMAL HEALTH



Gabriel Laporta (photo in the center) with health agents going to know the site research



In August, the pilot program was applied in Tapirai with the workshop **"Café e ciência: O que é Saúde Única e suas inter-relações nas instâncias da prefeitura"** (Coffee and science: What is Saúde Única and its interrelationships in the municipal authorities). In this first cycle of actions, the objective was to start a dialogue with the target audience about the One Health concept and its thematic axes, with the creation of a communication channel and the dissemination of knowledge pills.



(IMT-FMUSP), tries to detect it in animals that are the wild reservoirs of the parasites. A precise way to do this would be to collect blood from howler monkeys that live in the forest, but this process is extremely difficult and can bring risks to the animals. Then, the investigation is indirectly held, looking for traces of Plasmodium DNA, for example, in howler and other monkeys' feces.

Another important research to assess the condition of the ecosystem is performed by Arlei Marcili, Ph.D. in Biomedical Sciences and professor in the departments of Veterinary Medicine at the University of São Paulo and at the Santo Amaro University. He coordinates the project **"Programa de controle de zoonoses e impactos ambientais causados por fauna doméstica no Legado das Águas"** (Zoonosis control and environmental impacts caused by domestic fauna Program in Legado das Águas), which aims to discover the main zoonosis existing in domestic and wild animals in the Reserve area. The presence of bacteria or protozoa that cause a wide range of diseases such as leptospirosis, spotted fever, leishmaniasis and Chagas disease is being evaluated. *"From the generated data, we will be able to know which diseases are circulating in wild animals. As the population in areas close to the forest lives in direct contact with these animals, we will be able to investigate whether these diseases are also circulating among human beings"*, says Arlei Marcili.

This information is fundamental in the training of health professionals so that there are faster diagnoses of these diseases, more efficient treatments and practical preventive actions. *"By using the knowledge generated by researchers in a preserved area like*

*Legado das Águas to benefit the population, we also raise awareness about the problems caused by environmental degradation"*, says Marcili. *"When we degrade the environment, agents that previously only circulated in animals can adapt to humans, generating a new disease."*

Covid-19 is a didactic and tragic example of this situation because its most likely origin is that a virus that infected animals mutated and adapted to humans. For researcher Ana Maria Duarte, the One Health Program is an excellent opportunity to understand the situations that involve risks in the relationship between man and nature in Legado das Águas and the surrounding area. And, thus, act more incisively in prevention. *"The knowledge generated by the research results must be transmitted in a simple way to the population so that people absorb this knowledge and change some attitudes"*, says Ana Maria. *"Thus, we will be able to contribute with the local population to recognize, mitigate, or avoid potential situations associated with neglected diseases in Atlantic Forest areas"*, she adds. ■

## Research carried out in the forest provides the basis for a public health support program

Created from the perspective of integrating scientific research with the development of the territory, the **Programa de Saúde Única (PSU)** will use the information generated by research carried out at Legado das Águas to contribute to educational and training actions aimed at health professionals in the municipalities of Vale do Ribeira, in São Paulo. In this region, the Reserve is located.

This program was conceived from the concept of One Health, recognized by the World Health Organization (WHO), which points out that animal health and human health are interdependent and linked to the health of ecosystems. In partnership with Instituto Butantan, Universidade Santo Amaro and Faculdade de Medicina do ABC, several studies are being carried out in the Legado das Águas area on venomous animals, zoonoses and diseases transmitted by animals (such as malaria, Chagas disease or leishmaniasis).

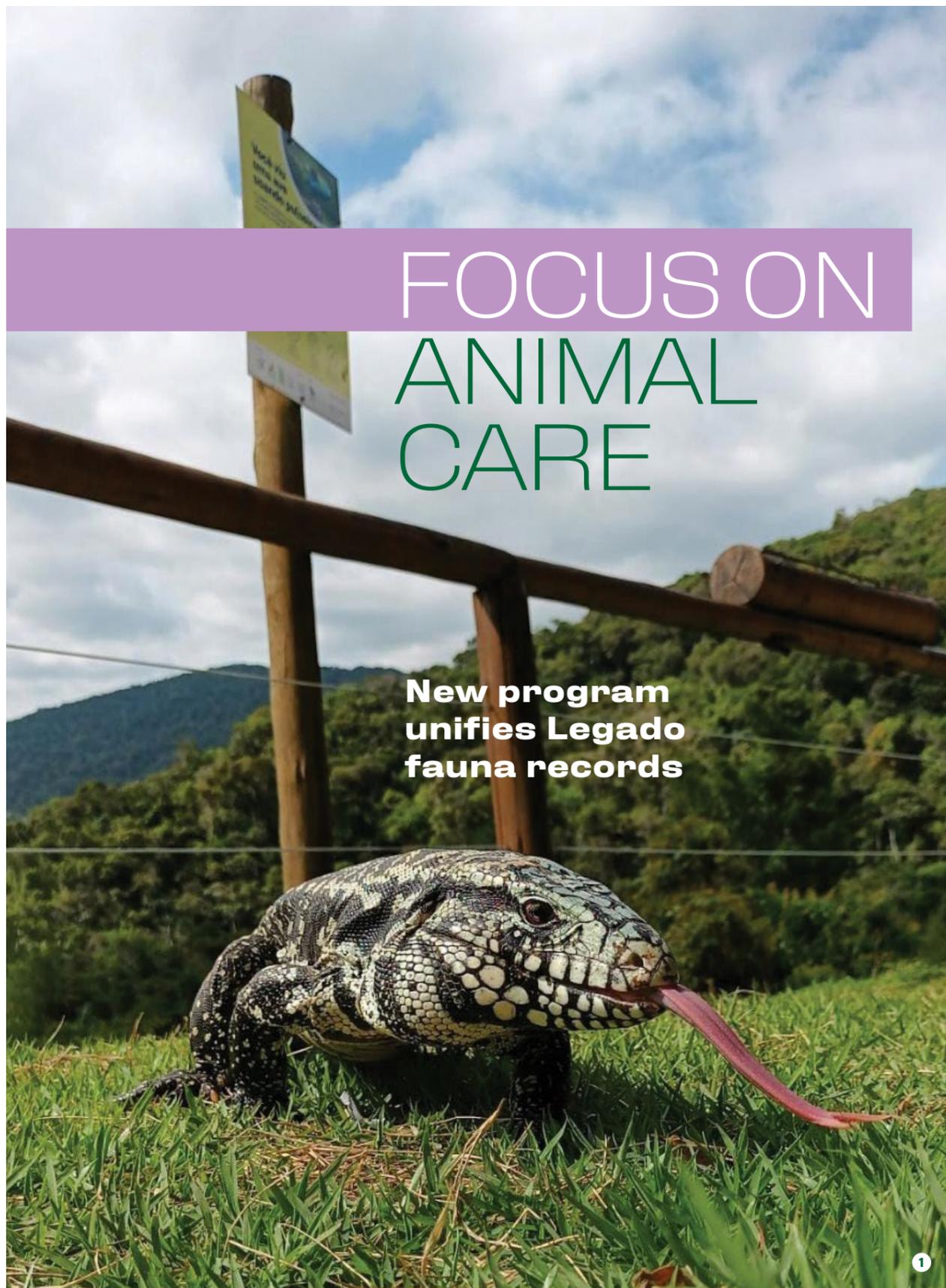
Many of these diseases, common in Amazonian or Atlantic Forest regions, are neglected by health systems, which are generally overburdened in the care of chronic diseases. Thus, diseases caused by forest agents such as fungi, bacteria, or parasites can affect vulnerable populations living in the vicinity of forest areas with limited access to health services and basic sanitation.

PSU began to emerge in March 2021, when the program's organizing team met with health workers from the municipalities of Juquiã, Miracatu and Tapirai to prepare a diagnosis and plan the development of actions dedicated to expanding technical and practical knowledge about the concept of One Health.

Municipal health officials attend lectures with researchers



Researchers studying zoonoses



# FOCUS ON ANIMAL CARE

**New program unifies Legado fauna records**

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2



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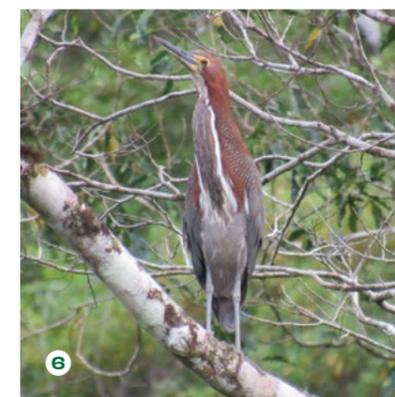


4



5

The photographic record of the animals of Legado das Águas has been done over the years in many ways, ranging from specific research projects to photos taken by employees. Now, with the **Fauna Monitoring Program**, these records are now unified, with the standardization and formalization of access to the database. With the technical support of Instituto Manacá, Onçafari and the Public Use area of Legado, the program seeks to promote major integration in records of fauna sightings in the Reserve, optimizing resources and enhancing the results of current and future projects dedicated to the Legado fauna study and management.

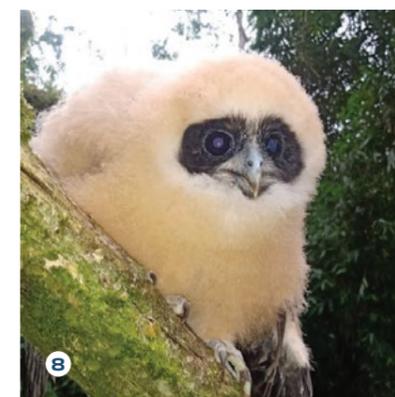


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7

One of the program's actions, in partnership with Onçafari and the Environmental Education area, was the creation of a **Fauna Observation and Recording Contest for Legado employees**. The objective is to engage the internal public to increase the sharing of the Reserve's fauna records.

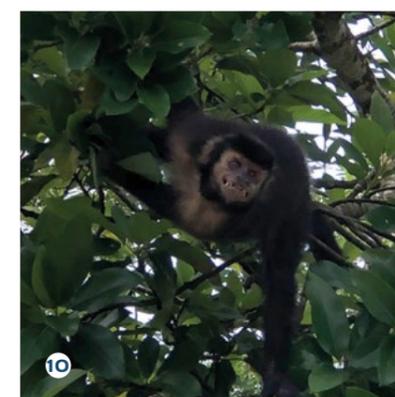


8

The first four editions of the contest already add up to 235 fauna records, ten times more in relation to the sum of records prior to the creation of the contest, which will continue in the coming years. ■



9



10

credits:  
 1 - Larissa Camargo; 2 e 9 - José Batista;  
 3, 4 e 8 - Alexandre da Conceição;  
 5 - Roni Barreto; 6 - Maria Angélica Toledo;  
 7 - Fernanda Pannunzio; 10 - Laís Mulato

# UNDER THE GIANT FIG TREE



**Globo Repórter  
exhibits the imposing  
Legado's fig tree**

**G**lobo Repórter, which aired on September 17, 2021, presenting the beauties of the Atlantic Forest, showed an unprecedented image: for the first time, a team was documenting on video the gigantic fig tree of Legado das Águas, 21 meters high and estimated age of 300 years. This life away from the cameras is justified by the difficulty in seeing it since the fig tree is inside the forest, accessible only by a challenging trail, with ascents and descents, crossing streams and fallen trunks.

The reportage showed some of the adversities faced by the Globo Repórter and Legado das Águas teams on this path, but the backstage was much more arduous. Carrying heavy equipment without the physical preparation or agility necessary to walk in the forest, the group spent three hours on the outbound route. And as they only reached the foot of the fig tree in the late afternoon, they had to walk back into the night for another four hours, again facing the ascents, descents, streams – and the rain.

Back at the base, where the inn is located, everyone was okay, although exhausted. Contemplating the imposing fig tree, however, made the journey worthwhile. *"It was an incredible personal experience for everyone. The fig tree is magnificent"*, recalls David Canassa, director of Reservas Votorantim and one of the participants in the expedition. *"The team had to be very brave to overcome all the challenges, but the result was spectacular"*, he says. ■

Here [is the complete coverage of Globo Repórter](#). The part about Legado das Águas starts at minute 31.



# SPOTLIGHTS ON FAUNA

## Monitoring done by Onçafari captures thousands of videos of Legado animals

Since September 2020, dozens of camera traps have been scattered throughout the Legado das Águas area, ready to capture videos of any animal that passes in front of them. These traps are composed of cameras coupled to motion sensors, triggering video recording as soon as the animals' approach. Installed by the team from Onçafari, an institution dedicated to the study and conservation of wildlife, the cameras obtained in just over a year thousands of records of different species, including 7906 videos of mammals and 1556 bird videos.

The installation of the cameras is part of the partnership between Onçafari and Legado das Águas, with the objective of carrying out a population survey of jaguars in the Reserve and developing actions to protect these felines in the Atlantic Forest. Although the onça-pintada (*Panthera onca*) has not yet been seen or photographed at Legado, the onça-parda (*Puma concolor*) was a constant presence in the videos. "We obtained 142 individual records of onça-parda, distributed in 300 videos", says Barbara Couto, a biologist from Onçafari responsible for the project at Legado. There are more videos than individual records because the same jaguar, in the same situation, can trigger the sensor and be filmed more than once.



Watch the videos of the animals on the [Legado das Águas YouTube page](#)

The second-largest feline in Brazil (smaller only than onça-pintada), onça-parda can be found in several Brazilian biomes but is endangered in some of them, as is the case of the Atlantic Forest. As it is a "top of the chain" species, which feeds on other species and needs large areas to survive, its presence, added to a great diversity of other animals, indicates that the habitat is well preserved, housing ecosystem essential animals and plants.

By the end of 2021, 80% of the 20 camera traps installed in Legado das Águas had captured videos of onças-pardas, demonstrating a good distribution of the species across the territory of the Reserve. "The animals are using a large part of the Legado area, proving the high degree of conservation of the forest and its importance for the preservation of Atlantic Forest species", explains Bárbara. In addition to the videos, 19 sightings of onças-pardas were also recorded in Legado das Águas, situations in which employees or visitors saw the animals with their own eyes.

Most of the animals captured by the cameras are mammals, but there are also birds, reptiles and insects. Among the small felines, an important record was that of a jaguarundi family (one adult and two kittens), an endangered species. According to David Canassa, director of Reservas Votorantim, the results of the first year of partnership with Onçafari were excellent, providing greater knowledge about the species present in Legado das Águas. "One of our goals is to have scientific tourism itineraries for the sighting of animals from Atlantic Forest", he says. "With the lessons learned from this project, we will be able to make pilot scripts in 2022." One of the preparatory activities for these itineraries is the training of Legado employees, carried out by the Onçafari team so that they know how to proceed when they see an animal.

From top to bottom: jaguarundi captured on camera; training of Legado das Águas employees; Barbara Couto and Stephanie Simioni at the Legado base. On the left, installation of cameras by the Onçafari team



Onçafari in Pantanal, a region in which it has been operating for ten years, already realizes wildlife observation tourism. There however, in addition to the large numbers of jaguars, the characteristics of the biome are quite favorable for them to be found, such as the flat terrain and sparse vegetation. Thus, tourists are taken aboard jeeps to places where they can see jaguars. In Legado das Águas, the dense woods of a preserved forest and the mountainous terrain make the mission of finding animals more difficult.

These obstacles make monitoring camera traps (checking batteries and changing memory cards) a much more complex job in the Atlantic Forest. While in Pantanal, it is possible to go by car and access several cameras in just one day, in Legado das Águas it is often necessary to walk trails in the middle of the forest for hours. For this reason, each week, the two biologists from Onçafari, Barbara Couto and Stephanie Simioni, are able to access two to five camera traps. The time it takes to visit all of them and collect the images is called a campaign – in each Legado campaign, the duo travels around 34 hours of walking trails, in addition to the 21 hours by car to go from the base to the entrance of the trails.

After being collected, the images are analyzed and the videos of the animals are separated by categories, such as jaguars, tapirs and peccaries, for example. The videos of each recorded species are counted and cataloged in a database. In the case of jaguars, the data compiled in Legado das Águas are also sent to the National Action Plan for the Conservation of Big Felines and to the National Program for the Conservation of Endangered Species (Pro-Espécies), both coordinated by the Ministry of Environment.

After more than a year of work and dozens of kilometers of trails covered, the Onçafari researchers have already come across several animals, such as tapirs, peccaries, capuchin monkeys, muriquis-do-sul and snakes, without these encounters posing any risk. *"We have the training to deal with these situations. If we respect the animal's space, everything goes smoothly"*, says Barbara Couto. This list of sighted species only has one big gap, as Barbara reveals: *"We really want to meet a real jaguar, but we haven't had that luck yet"*. ■

### WHERE ARE THE FELINES

Number of onças-pardas records in Legado das Águas.



## JAGUARS WITH AN ID

While onças-pintadas are easily identifiable thanks to the unique patterns of their spots (called rosetas), onças-pardas are difficult to distinguish as they have a uniform coloration in their coat. It is necessary to identify them, be aware of variations in size, coat and coloring, carefully analyze the videos and look for unique characteristics, such as fractures or scars. See in the photos the five jaguars that the Onçafari team managed to individualize.

### 1. CAPITU

The only female-identified, its striking features are the eyes with a black outline and the great concentration of hair on the body, but mainly on the tip of the tail.



1

### 2. TIKÚN

Its fracture at the tip of the tail makes this male easier to identify, but it also has yellowish eyes and a darker snout around it.



2

### 3. DENGOSO

With lighter patches above the eyes that resemble "white eyebrows" and multiple scars in the right shoulder region, it is one of the largest individuals observed.



3

### 4. NAURU

This male has a very marked lesion in his left eye, in addition to some others through the body.



4

### 5. TRONCHO

It is also easily identified thanks to its dropped left ear.



5

# COMMUNITY CONNECTION

## Assistance during the pandemic and resumption of projects mark social action

In 2020, the first year of the Covid-19 pandemic, the social action of Legado das Águas was aimed to support Vale do Ribeira's municipalities in the most urgent issues. Legado donated personal protective equipment (PPE) to health professionals and equipment for ICUs at regional hospitals and provided essential food baskets for the neediest families.

In 2021, although immediate support actions were still necessary, we gradually resumed projects with communities in person since we had carried out only online activities in the previous year. Support for Public Management (AGP) focused on Health, helping municipalities face the pandemic and preparing for economic recovery.

Since its foundation, Legado das Águas has made a long-term commitment to transforming communities and municipalities in the territory, contributing to developing local production chains and maintaining forest conservation. The changes are already visible for Daniela Gerdenits, coordinator of Partnerships and Social Responsibility at Reservas Votorantim. *"Things are happening not only by the perspective of relations with the community but also by creating business."*

We can measure some of these impacts by indicators based on the Sustainable Development Goals, which have been under development for two years and were first published in 2021 (see more on page 46). Two indicators directly reflect the relationship with the community – local purchases and local contracting, revealing that most suppliers and employees of Legado das Águas are from the surrounding communities. *"This is the translation into practice of developing inclusive local productive chains"*, attests Daniela. In addition to implementing the indicators, another vital action was the advancement of dialogue with communities living in the Legado das Águas area. See below the main actions developed throughout 2021.

## HEALTH MANAGEMENT SUPPORT

One of the main initiatives of social action in 2021 was the Public Health Management Support Program (AGP Saúde) in Tapirai, managed by Legado das Águas in partnership with the Votorantim Institute and invested by Votorantim Energia. The municipality received support to face the pandemic and improve its offer of comprehensive health care and other management tools. Among the priority topics addressed were the monitoring of Covid-19, the vaccination campaign and the expansion of primary health care.

The first step of the program was the application of a rapid diagnosis of the municipality's performance in the health area, with emphasis on primary care and epidemiological surveillance. The municipality defined priorities, urgencies, goals and objectives. A multidisciplinary team implemented the program, organized by the town, which participated in online mentorships. Guided by consultants from AGP Saúde, the participants of this team were responsible for implementing the defined action plans, monitoring the experimental evolution of the initiatives and evaluating the results.

In the first half of 2021, with the significant increase in cases and hospital admissions in the second pandemic wave, it was necessary to act directly in support of hospitals in the Vale do Ribeira region. Then came the Tele-UTI project, in partnership with the Votorantim Institute and BP – Beneficência Portuguesa de São Paulo. BP's experienced intensivists helped professionals at overworked regional hospitals through online consultations, recommending the most appropriate treatments and procedures in emergencies.

Tapirai was just one of the 34 municipalities across Brazil that participated in the AGP Saúde in 2021. The program has been one of Votorantim's initiatives since March 2020 to support society in the fight against Covid-19. In addition, there was the participation of all the investees of its portfolio and the Votorantim Institute. Its impact will extend far beyond the pandemic. *"We are part of an intelligence and innovation center, where several technologies developed were made available, which will leave a positive long-term legacy for the entire network that we operate: city halls, hospitals, health professionals and all Reservas Votorantim employees who solidarity in this movement"*, says Daniela Gerdenits, coordinator of Partnerships and Social Responsibility.



## ECONOMIC RECOVERY PROGRAM

The Public Management Support Program (AGP) has been taking place since 2015 in the three municipalities of the Legado das Águas territory (Juquiá, Miracatu and Tapirai), strengthening the role of the government as an agent of local development. In 2021, we mainly aimed the performance of the AGP in Tapirai at planning the city's life after the Covid-19 pandemic. The Economic Recovery Program, which we began to design in March 2021, results from a partnership between Legado das Águas, the Votorantim Institute and the Tapirai City Hall, with support from the consultancy EloGroup.

With a focus on agriculture and tourism, the program has the initial objective of reactivating the municipal economy in the post-pandemic period and then attracting new investments to the city in a sustainable way to generate employment and income. It was implemented in August with a communication plan on the economic recovery of Tapirai, seeking to sensitize and engage the population in the program's initiatives.

Among the initiatives to be implemented in the short and medium terms, there is a campaign to formalize small rural producers and support training on associative and cooperative and guidance for participation in local public purchases.

## ASSISTANCE ON BACK TO SCHOOL

For the sixth year, the Partnership for the Valorization of Education (PVE) was carried out in Juquiá by Legado das Águas, in partnership with the municipal Department of Education and with support from the Votorantim Institute. After supporting municipal schools in remote teaching activities during the pandemic, in 2020, we took actions to help with the resumption of classes in hybrid mode. Students spend part of their time at home and part at school. Legado directed the program to deal with this teaching and learning situation, building a pedagogical plan to help teachers in this new reality of education.

PARCERIA PELA VALORIZAÇÃO DA EDUCAÇÃO



ESTAR PRESENTE FAZ A DIFERENÇA

## HISTORY THROUGH THEIR OWN EYES

Teachers and students from municipal schools in Juquiá, Miracatu and Tapirai are co-authors of books that tell the story of the main places and characters in their cities. Launched at the end of 2021, with the support of Legado das Águas and the Votorantim Institute, the books are part of the collection **A Cidade da Gente**, by Editora Olhares, which has already helped to rescue the history of several Brazilian municipalities.

Based on research and investigations carried out by students, with the help of teachers, professional writers José Santos and Selma Maria give the final format to the books. The project's objective is to disseminate and perpetuate the history of the cities covered, expanding children's notions about their identity and belonging to the city and region where they live. Take a look at the book of Juquiá [here](#) and the book of Tapirai [here](#)



## VOLUNTEER CHALLENGE

Held every year, the Volunteer Challenge had three significant actions in 2021. First, we carried out a campaign among employees to donate 100 blankets to families in rural Tapirai, an intensely cold region in winter.

The second action, conceived within the concept defended by Legado das Águas of education for environmental conservation, took some team members to visit a municipal school in Tapirai. The objective was to show young people the activities carried out at Legado and the forest's job opportunities. For some students, mentorships also occurred on the performance of each professional in the different areas.

Another mentoring activity, with the theme of communication in tourism, was carried out for members of the Municipal Tourism Council of Tapirai.

Finally, we received twenty students at Legado das Águas to learn about the structure and operations of the Reserve, having contact with qualified professionals who showed their day-to-day experience in practice.



## TERRITORIAL DEMARCATION

For over ten years, Legado das Águas has identified consolidated possessions in its territory. As the Reserve is in an Environmental Preservation Area (APA), identification and delimitation are essential to recognize the responsibilities of both the residents and the Legado over their properties. The process occurred in stages on 31,000 hectares of the Reserve. And in 2021, it entered the detailing phase in the Legado territory, located in Tapirai.

There was a public hearing at the Tapirai City Council for the population to know and understand the process. The particular newsletter *Nosso Legado* was also distributed in the city, showing the history and activities of the Reserve and highlighting the importance of land tenure regularization for the residents themselves and the conservation of the forest.

*"Since the beginning of Legado das Águas, we have always stated that we would respect the consolidated possessions in our territory and now the time has come to do that in the Tapirai region. It is a process that involves dialogue and agreement and we hope to have great progress by the end of 2022", says David Canassa, director of Reservas Votorantim.*

## FILMING LIVE THEATER

We resumed the 360 Degrees Project, paralyzed in 2020 due to the pandemic, by uniting face-to-face and online activities. In partnership with Legado das Águas and Instituto Votorantim, the project was coordinated by the group CORPO INCENA ARTE EDUCAÇÃO and aimed at the cultural education of young people through theater, encouraging autonomy, creativity and self-esteem. The group held make-up workshops and dramaturgy, body expression and musicalization classes with young people from underprivileged communities and public schools in the municipalities of Juquiá and Miracatu.

After participating in workshops, the students supported all stages of the development of a play, including production and script. In 2021, due to the limitations imposed due to the pandemic, they decided to film the play "Amores de Férias". Thus, besides some in-person presentations, they also exhibited the show online.



## ONBOARD CINEMA

In 2021, cultural projects supported by Legado das Águas will have to be adapted to health protocols to prevent contamination by Covid-19. One of the innovations was the Cine Autorama, in which they had to show short and feature films with themes related to sustainability outdoors. Isolated inside their cars, spectators could safely watch the movies. Cine Autorama had more than a thousand spectators in exhibitions held in Juquiá, Miracatu and Tapirai.

Another project was Cinesolar, in which a van with solar-powered equipment takes cinema projections to distant locations, with short and feature films with children and youth and sustainability themes aimed at audiences of all ages. Held by Brazucah Produções, the project also promotes workshops with public school students, providing access to basic techniques and elements that make up the cinematographic language. With the support of Legado das Águas, this project prioritized access to the cinema in communities in rural areas with less access to cultural projects.

The Cinesolar sessions also marked the conclusion of the Rede Brazucah training project in Miracatu, which in 2020 trained students from local public schools to perform activities as cultural agents and content producers for the internet. With a workload of 72 hours, there were classes in an online background, with the syllabus focused on audiovisual production on social networks, covering relevant environmental and social topics today.

At the end of the course, the young people produced the documentary "What is it like to be black?" from remote recordings by teleconference to the interviews that make up the material. The movie can be watched [here](#)





# MEASURED IMPACT



## Legado published the first report with indicators aligned with the Sustainable Development Goals (SDGs)

Born under the premise of promoting sustainable development through the conservation of the Atlantic Forest, Legado das Águas has integrated the **Sustainable Development Goals (SDGs)** into its management and business model. Launched by the United Nations in 2015, the SDGs establish 247 indicators, grouped into 169 targets and 17 main objectives, balancing the three dimensions of sustainable development: economic, social and environmental. They guide the face of the challenges of societies to guarantee that the world population has a quality of life and fundamental rights guaranteed, at the same time that the environment is protected, stipulating the year 2030 as a deadline.

In Brazil, 101 of 247 indicators monitored by IBGE provide a reference for working on the SDGs in the country. Based on this base, the Legado das Águas team established specific goals and indicators for its activities in Vale do Ribeira, Reserve's region.

This process took two years. In 2019, the Legado team mapped the possible synergies between the goals and indicators of the SDGs monitored by IBGE against the operations of each Legado area. In 2020, the group organized indicators that reflected the results of the regions, contributing to the SDGs.

In 2021, we implemented the integration of these indicators into the management and business model, publishing the first report at the end of the year. Legado obtained good results in all areas,

emphasizing the fulfillment of SDGs related to biodiversity protection, scientific research, management and education, gender equality and employment and income.

*"Today, we can say that 100% of the Legado das Águas operation effectively contributes to the SDGs. Nine years from now, when the goals got evaluated globally, we want to look at our performance and be proud of the legacy we are leaving of sustainable development for our territory and the country",* says Daniela Gerdenits (coordinator of Partnerships and Social Responsibility at Legado das Águas and leader of the indicators implementation project).

For David Canassa, director at Reservas Votorantim, Legado das Águas has always proposed anticipating trends and being a protagonist with innovative management. *"With these results, we hope to inspire other companies to do the same, as we show that it is possible to incorporate the SDGs, in fact, into the management strategy, staggering good practices for all business operations",* says Canassa.

The SDGs Progress Report on Legado das Águas is constantly updated and it is available on the [website](#).

## PRIORITIES AND HIGHLIGHTS

All work at Legado das Águas is developed to generate a shared value between the company and society, following four significant guidelines. See the main results monitored in each priority area.

### PROTECTION OF BIODIVERSITY

Ensure the integrity of the forest through its protection, where water (SDG 6) and biodiversity (SDG 15) are the mainstream for conservation.

### SCIENTIFIC RESEARCH

Seek partnerships with society and other stakeholders (SDG 17) to ensure the protection of fauna and flora through scientific research and monitoring of the territory.

### EMPLOYMENT AND INCOME

Promote initiatives that encourage the creation of chain production, contributing to work and income generation (SDGs 1 and 8).

### MANAGEMENT AND EDUCATION

Promote internal training and local development through social programs that support public management and contribute to improving education (SDG 4).

## MAIN RESULTS IN 2021

INDICATOR	RESULT	SDGs
Number and % of direct Reserves/ Legado das Águas workforce hired locally	Average of 45.6% hired locally	<b>1</b>
Number and % of locally hired outsourced labor	91.5% of hires are local	<b>1</b>
Number and % of female labor hired	Average of 49.5% of female hired labor	<b>5</b>
Number and % of outsourced female labor	Average of 18.3% of female hired labor	<b>5</b>
Women in leadership positions	67% of women in leadership positions	<b>5</b>
The proportion of local contracting of services and materials	Average of 29% local hires	<b>1</b> <b>12</b>
Number of native plants produced for landscaping	42.413 plants produced during the year	<b>2</b> <b>15</b>
Hectares implemented in reforestation	55.5 hectares reforested in the year	<b>6</b> <b>15</b>
Treated water for human consumption at the base of Legado and Vila da Fumaça	100% treated water	<b>6</b>
Sewage treatment at the Legado base	100% treated sewage	<b>6</b>

# FROM KNOWLEDGE TO CONSERVATION

## Environmental education resumes face-to-face activities with a focus on caring for the forest

After a year of carrying out only online activities, the Environmental Education area of Legado das Águas faced uncertainty about the return of face-to-face activities, especially in early 2021, when the second wave of Covid-19 brought new restrictions directly affected planning and carrying out the actions.

There were no face-to-face activities in schools or communities during the first semester. During the second semester, the slowdown of the pandemic made it possible to resume some actions and start the Guardians of the Atlantic Forest project. See the highlights in Environmental Education in 2021 below.

## SHARES IN VOTORANTIM ENERGIA (VE)

In celebration of World Water Day (March 22), VE held an artistic and photographic contest for the children of its employees, with the theme "Water is Life". In June, during the Environment Week, an online lecture for employees on Biodiversity took place in partnership with Onçafari.

## TROPICAL FELINES

In 2021, Legado and Onçafari produced the booklet "Atlantic Forest and its inhabitants", which provides information on six species of wild felines found in the biome and Vale do Ribeira. Designed to support Environmental Education actions, it presents illustrations and data with the main characteristics of the following animals: onça-pintada, onça-parda, jaguatirica, jaguarundi, gato-maracajá and gato-maracajá-mirim. "The booklet was prepared to help the residents of the communities and the students to get to know the main cats of the Atlantic Forest. So, they can differentiate them during sightings on the roads and neighborhoods around the Legado", says Elaine Izabel de Moura (analyst of Environmental Education at Legado das Águas). "The booklet facilitates identification because it provides the information and characteristics of these animals in a didactic way."



## CLASSROOM ABOUT ONÇA-PINTADA

On November 28, the residents of Bairro do Mono, in Miracatu, spent their Sunday morning in a different activity. In celebration of the National Day of the Onça-pintada (Panthera onca), which takes place on November 29, children, teenagers and adults learned a little more about the Americas' largest feline during lectures and recreational activities.

A partnership between Legado das Águas and the Onçafari team, which monitors cats and other mammals in the Reserve, the action aimed to raise awareness of the importance of the jaguar and demystify information that harms the conservation of the species. After a lecture by Onçafari giving more details about the feline research at Legado, began a dynamic that taught participants to recognize jaguars (onças-pintadas) by observing the spots called rosetas. Just like human fingerprints, each individual has a unique roseta pattern. At the end of the program, participants received a copy of the "Atlantic Forest and its inhabitants" booklet.

Biologist Stephanie Simioni, the coordinator of the Social Front at Onçafari, explains that this action is part of a series of initiatives aimed at educating local communities about the importance of nature conservation. "In Atlantic Forest forests across the country, the population of jaguars is estimated to be less than 300 individuals. If nobody does anything, there is a great risk that this animal will become extinct in the biome in a few years", says Stephanie.

For this reason, the Vale do Ribeira region, located in the largest continuous and best-preserved area of the country's Atlantic Forest, is vital for the jaguar's survival. "Much of this work begins with environmental education, which helps people value and care for the forest. It is also necessary to devise strategies to live in harmony with this animal, reducing hunting, for example, one of the main threats", explains the biologist.



## DEFENDERS OF THE FOREST

Using Environmental Education to strengthen the role of children and adolescents in protecting the Atlantic Forest – is the objective of the Guardians of the Atlantic Forest Program, which seeks to form a new generation engaged with the conservation of one of the most threatened biomes on the planet.

The program aims to contribute to knowledge about the Atlantic Forest in regular education by sharing the results of scientific research carried out at Legado das Águas, in addition to other topics linked to the school curriculum. We carried out six activities at EMEF Maria do Carmo in Juquiá, including various recreational and interactive activities, such as educational games, audiovisual production workshops, cinema sessions and educational cards. At the closing seminar, participants made a card recognizing the guardians who participated in the program. In 2022, the program will have a new edition in Juquiá, expanded to Tapirai.

The 2021 stage had the Onçafari support (Onçafari carries out research with jaguars at Legado), the Butantan Institute participation (partner of the Reserve in research with reptiles and amphibians), Brazuca Produções contribution (partner in audiovisual cultural projects) and the Municipal Secretary of Education in Juquiá support.

According to Elaine Izabel de Moura, Environmental Education analyst at Legado das Águas, the Guardians of the Atlantic Forest is in line with the Paulista Curriculum, the guiding document for public education policies in the State of São Paulo. In addition, the program activities contribute to developing some skills and critical thinking in students. "Contact with nature, free play, knowledge and observation of the natural world enrich the repertoire of childhood and adolescence, influencing the ability to learn, create and deal with challenges and differences", comments Elaine. "These experiences generate memories that favor a more caring attitude towards nature, forming more aware citizens", explains the biologist.

# ART PORTRAYS THE PARTNERSHIP



## Legado inaugurates a mural in honor of the founding companies

The founding companies mark the roots and trajectory of Legado das Águas since the lands along the Juquiá River began to be acquired by **Votorantim** in the 1940s until the creation of the Reserve in 2012. Since then, the founding companies – **CBA**, **Nexa**, **Votorantim Cimentos** and **Votorantim Energia** – contributed to the formation and maintenance of the Reserve and the creation of a new business model.

On the eve of completing a decade, the Legado recognized these companies in its auditorium, which changed its name to **Auditório Fundadoras** and received the painting of a mural on its walls. The designer Rafael Agostinho created and executed the mural. He was also responsible for the visual communication of Legado das Águas for several years.



The project began to develop in August 2020, when Rafael and the Communication area of Legado das Águas started conversations with former employees of the founding companies in search of unique stories and curiosities to build a narrative. The idea was to show the preserved fauna and flora of the Atlantic Forest in a kind of timeline, presenting historical elements of the Reserve and the founders in a light and playful way.

*"My starting point for creating the mural concept was the water element, specifically the Juquiá River. It crosses the entire Reserve, is an important resource for the development of the territory and has a mutual relationship with the forest", explains Rafael Agostinho. "From the design of the river, I sketched other elements, composing and filling the 58m<sup>2</sup> of the wall."*

Along with the mural, well-known characters from the Legado das Águas appear on the longest wall, such as the albino tapir and the muriqui-do-sul, in addition to historical icons – the barrier of a dike and a cart, symbols of the process of construction of the plants. Barriers through machete-cut trails in the 1950s. On the smaller wall, illustrations such as canoeing, bicycles and trails represent current public use, promoting ecotourism, environmental education and scientific research.

The connection with the founding companies is also evident in the colors used, as they honored the colors of their brands and the brand Legado das Águas. After 14 months of design and 10 days of execution on the auditorium walls, we inaugurated the work on November 27, 2021.



According to David Canassa, director at Reservas Votorantim, the mural is a way of recognizing the important role the founding companies played in the trajectory of Legado das Águas. *"The Legado only exists because of Votorantim and the founding companies, which not only financially supported the creation of the Reserve, as they contributed to the maintenance of this territory since the acquisition of the land in the 1940s."* ■



# VISUAL IDENTITY



## Reservas Votorantim launches a new brand and strengthens its business model

Since the foundation of Reservas Votorantim in 2014, the company's objective has been to show the value of the standing forest, proving that it is possible to generate business responsibly in protected areas, ensuring the maintenance of the place itself and fostering new local production chains. Currently, the company manages two environmental reserves – Legado das Águas and Legado Verdes do Cerrado in Niquelândia (GO) – and Pátio Caeté, a space for the commercialization of native plants in the city of São Paulo.

In the last two years, Reservas has strengthened itself with new products, becoming a specialist in offering nature-based solutions. From the Biodiversity Centers, Legado das Águas and Verdes do Cerrado, seedlings and plants come out for various applications, such as landscaping projects, ecological restoration, or planting carried out in environmental awareness activities carried out by companies and schools.

Legado's business model itself has become a consulting service to replicate this form of multiple-land use in conserved areas, integrating company, community, new economic activities and biodiversity conservation. As one of the investees of Votorantim S.A, Reservas has also consolidated itself as a company that provides solutions for other members of the portfolio, like the Vazantes Mineiras project developed for Nexa in the city of Vazantes (MG).

Throughout 2021, Reservas matured through the move to its headquarters, in the Vila Leopoldina neighborhood, in São Paulo, in addition to the launch of a new institutional website bringing together all the company's projects, products and services.

*"This path culminated in the presentation of our new brand, which positions Reservas in the market as an environmental solutions company that is part of the Votorantim portfolio", says David Canassa, director of Reservas Votorantim.*

The purpose of the new brand is to express Reservas' personality and commitment, allied to Votorantim's aim of transforming opportunities into business. *"We developed the Reservas Votorantim logo based on the territory and brand architecture of Votorantim S.A., which also endorses other brands of the group, such as Instituto, Memória and Academia Votorantim", explains Rafael Agostinho, creator of the new visual identity. "Reservas Votorantim has its own identity but is always associated with the parent brand."*



Currently, both Legado das Águas and Legado Verdes do Cerrado have their own business plans. With the administration of both centralized in Reservas, perspectives and opportunities are enhanced, seeking new businesses that they can implement in two Legados. In addition, the Reservas Votorantim brand proves, through Legados, that its territory management strategy works in an economically viable, socially fair and environmentally sustainable way. *"The new brand is the crowning achievement of this work, showing that it can generate value and do business with the forest standing", says David Canassa. "This gives more strength to Legacies and makes Reservas Votorantim ready for new challenges."*



Reservas' team in the new office in São Paulo

# reservas VOTORANTIM

## MISSION

Provide the best solutions for territorial management of conserved areas through multiple-land use management, nature-based solutions and the development of inclusive production chains.

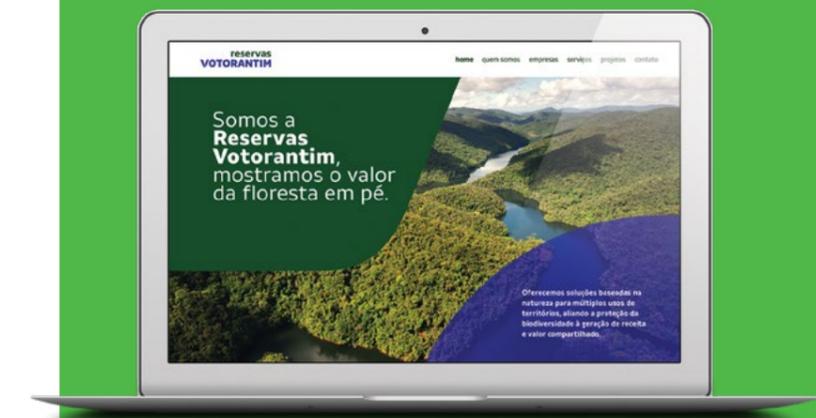
## VISION

Foster private protected natural areas that become a global reference in ESG management and innovation, generating shared value.

## VALUES

- Integrity;
- Doing the right thing, valuing differences, respect and ethics;
- Collaboration;
- Network of connections, dialogue and experiences, valuing people;
- Courage;
- Protagonism, innovation, learning.

Access the new institutional website of Reservas Votorantim



# WHAT'S TO COME

## Main actions for 2022

- Creation of new self-guided trails;
- Implementation of a new long-distance trail, with approximately 10 km;
- Pilot project for an animal observation route, in partnership with Onçafari;
- New bike trail, covering a large area of the Legado;
- Continue with research and those carried out with partners;
- Resume prospecting for perfumes and fragrances from the Atlantic Forest;
- Continue developing socio-environmental projects that value and respect the vocations of the communities in Vale do Ribeira;
- Expand environmental compensation projects in the Legado area;
- Expand the sale of seedlings and plants from the Biodiversity Center to other capitals in the country, in addition to São Paulo;
- Formatting of new products and services aimed at companies that seek solutions integrating environmental and social issues;
- Expand the consulting service for diagnosis and implementation of multiple-land use management in areas that need restoration or conservation of native forests.



## Global Reporting Indicators (GRI)

Annually, we monitor and report some indicators in accordance with the criteria of the Global Reporting Initiative (GRI). See the main results for 2021:

ENTERPRISE CATEGORY	GRI 102-7
Small Business.	

EXTERNAL INITIATIVES	GRI 102-12
<ul style="list-style-type: none"> <li>• Reservas Votorantim, manager of Legado das Águas, joined the UN Global Compact in November 2021.</li> <li>• In the Legado das Águas sustainability agenda, we include the following Sustainable Development Goals: 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 15 and 17.</li> <li>• As of 2021, we started monitoring and publishing a report with indicators and targets based on the SDGs.</li> </ul>	

ASSOCIATIONS INCORPORATION	GRI 102-13
<ul style="list-style-type: none"> <li>• Environment Council of the Government of the State of São Paulo;</li> <li>• FIESP Environment Council (CONSEMA);</li> <li>• Great Atlantic Forest Reserve;</li> <li>• Management Board of APA Serra do Mar (incumbent);</li> <li>• Ribeira, Iguape and Litoral Sul Hydrographic Basins Committee (incumbent);</li> <li>• Technical Chamber of Tourism of Codivar (Consortium for the inter-municipal development of the municipalities of Vale do Ribeira and Litoral Sul).</li> </ul>	

ENERGY CONSUMPTION (liters)	GRI 302-1
Non-renewable/gasoline_____	28,993
Non-renewable/diesel oil_____	22,546
Renewable/ethanol_____	268

WATER (m³)	GRI 303-3, 303-4
Underground withdrawal_____	5,234
Disposal in Cambuci Stream, after conventional biological treatment_____	2,298

PROTECTED HABITATS	GRI 304-3
The total area protected by Legado das Águas is 310 km² in the Atlantic Forest biome.	

GREENHOUSE GAS EMISSIONS (tCO2e)	GRI 305-1
Scope 1 (direct emissions)_____	16,028

EFFLUENTS AND WASTE	GRI 306-3
Disposal of non-hazardous waste in a sanitary landfill_____	11.2 t
Disposal of hazardous waste (from ETE)_____	9 m³

ENVIRONMENTAL INVESTMENTS (R\$)	GRI G4 EN-31
Total investments and expenses_____	278,454.06
Environmental education_____	16,215.00
Environmental management_____	11,577.00
Waste treatment_____	125,564.00
DHO/Environmental Area_____	80,804.70
Environmental insurance_____	34,567.76
Other environmental expenses_____	9,725.60

EMPLOYEES		GRI 401-1, 405-1	
Own employees	Men	Women	
38	14	24	
Under 30 years old	30 to 50 years	Over 50 years old	
14	21	3	
Service providers	Men	Women	
66	58	8	
Total	Men	Women	
104	72	32	

PERCENTAGE OF OWN EMPLOYEES BY CATEGORY, ACCORDING TO GENDER AND AGE GROUP (%)					
Functional Category	Age Group			Gender	
	30-	30 a 50	50+	Men	Women
CEO	0	100	0	100	0
Manager	0	0	0	0	0
Coord./Consultant	0	100	0	14.3	85.7
Technician/Analyst/Supervisor	27.3	72.7	0	63.6	36.4
Operational	57.9	26.3	15.8	26.3	73.7
Total	36.8	55.3	7.9	36.8	63.2

HEALTH AND SAFETY	GRI 403-9
There were no records of accidents or deaths among own employees. Regarding outsourced workers, we implemented this control throughout 2021 and it will be reported in 2022.	
Investment in health and safety_____	R\$ 58,456.00

SUPPLIERS	GRI 414-1
Total (in numbers)_____	497
Suppliers are evaluated according to criteria related to human rights, such as child labor, discrimination and forced or compulsory labor.	
The list of employers published by the Ministry of Labor and Employment with cases of administrative convictions for using labor in conditions similar to slavery is verified.	

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RESERVA VOTORANTIM

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companies



**nexa**



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maintaning institution

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