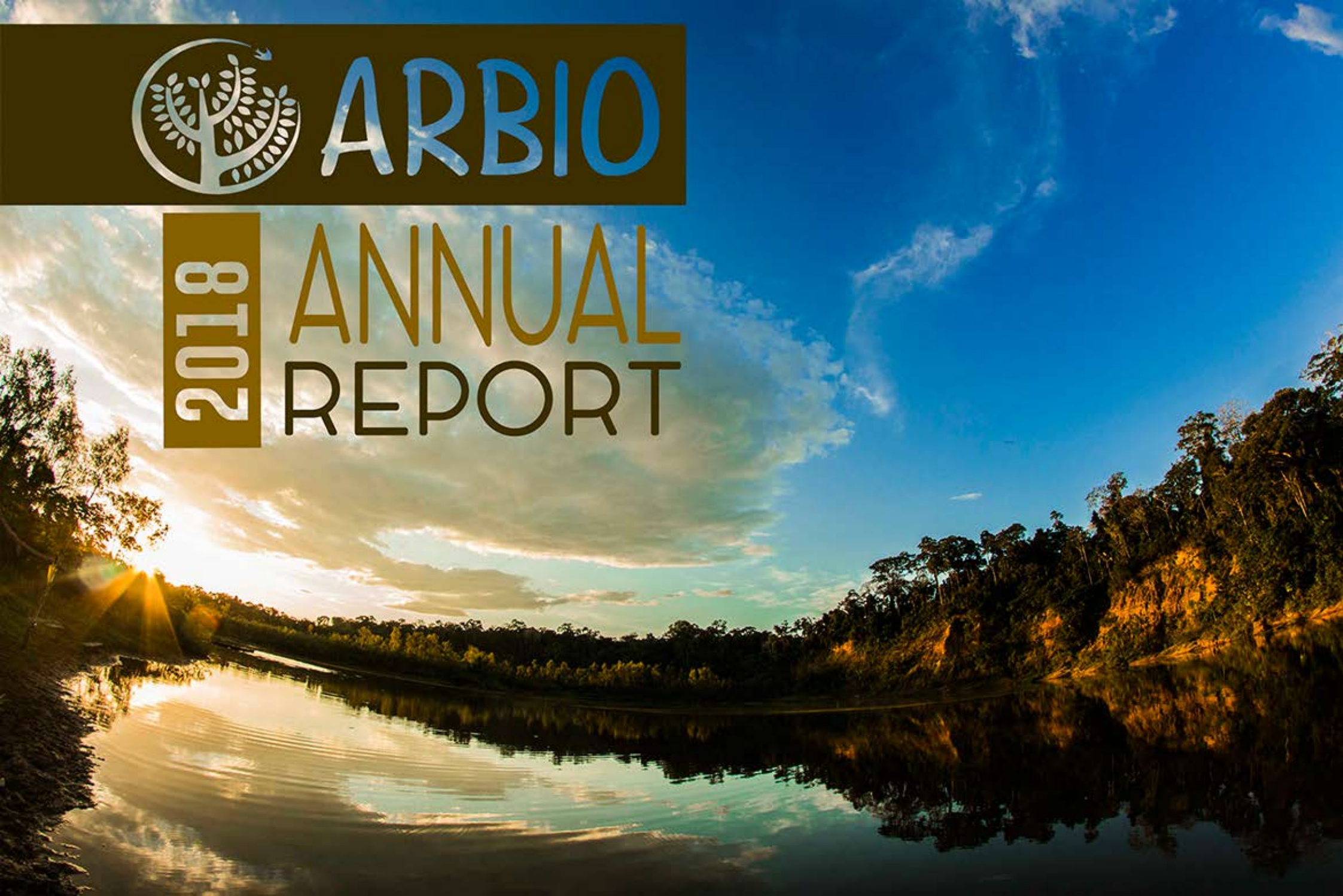
ARBIO

2018 ANNUAL REPORT



2018 was a special year for us. Tatiana Espinosa, our founding member, was recognized by the International Ranger Federation and The Thin Green Line organization with the Jane Goodall Hope and Inspiration Ranger Award for the work she is carrying out to protect the Amazonian ecosystem.

This recognition motivates us to continue in a renewed committed way with our efforts to protect and preserve the 916 hectares that we look after on the banks of Las Piedras river in the Madre de Dios region.

This year we launched a latest version of our hectare sponsorship system, as well as the first prototype of a System of Protection of Large Amazonian Trees. These applications allow us to finance our activities and connect with people all over the world who would like to be part of our Defenders of the Forest network and wish to have the possibility of paying us a visit and share on site the activities we carry out in the Las Piedras river basin.

Thanks to all of those who value our work and who follow us on social media and express their support to our actions in the Amazon. Thanks to all the sponsors of hectares and trees. We hope to keep inspiring so more organizations and people get involved in protecting nature, as it gives us everything and asks for nothing in return.

A HUGE HUG

ROCIO ESPINOSA

ANNUAL REPORT 2018

WHO WE ARE

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BOARD OF DIRECTOR

ROCÍO ESPINOSA

TATIANA ESPINOSA

GIANELLA ESPINOSA

STAFF OF ADVISORS

DANIEL VALLE BASTO

SAYAKA OTA NAKAYAMA

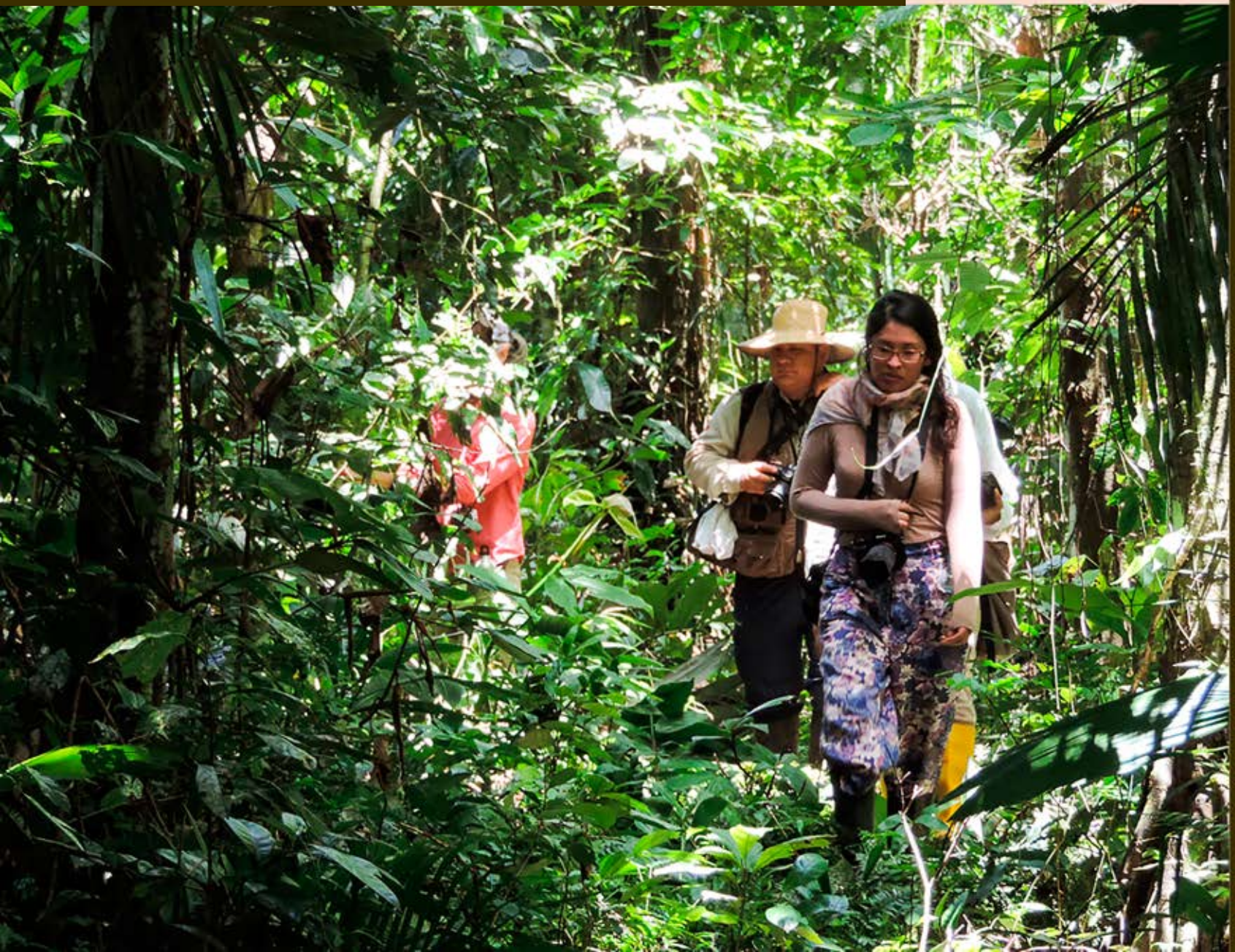
LUIS LLERENA BERMUDEZ

FERNANDO ANGULO PRATOLONGO

GERMAN CHAVEZ

MILO BEKINS FARIES

DEFENDERS OF THE FOREST



OUR WORK

ANNUAL REPORT 2018

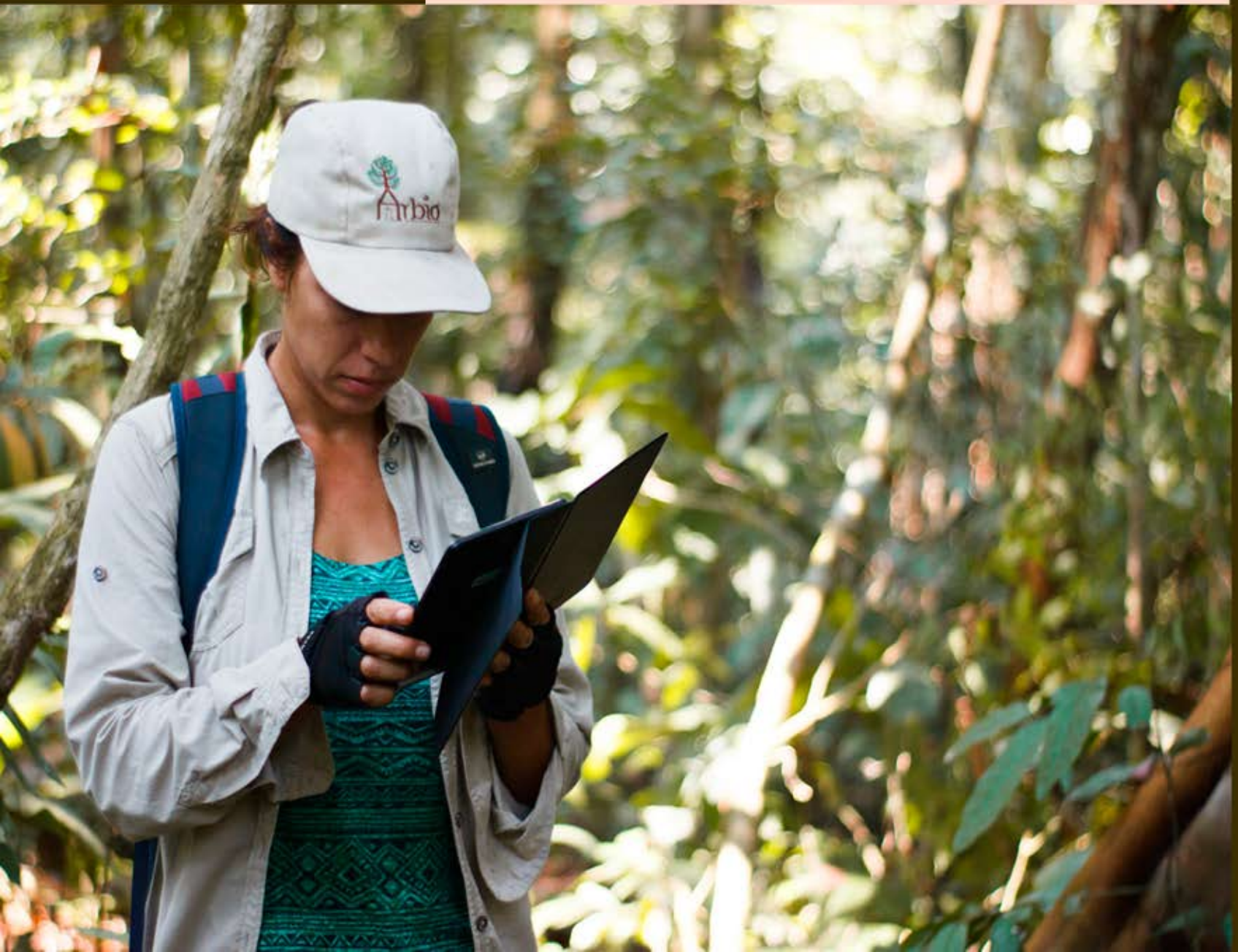
DEFENDERS OF THE FOREST

We manage and look after 916 hectares of forest (9.16 km2) in the Las Piedras river basin, province of Tambopata, Madre de Dios, Peru. This area was granted as a concession for 40 renewable years by the Peruvian state in 2006.

We built our biological station with materials from the forest (cabins for bedrooms, a dining room, a kitchen, bathrooms, and a watchtower). We have operational equipment and a boat to sail on the river, a well and a pump for underground water, a biodigester, a generator, and a radio for communications. There is no Internet service, telephone signal, public lighting, nor electricity in this place. We connect with the forest.

We have 12 km of trails and circuits that follow interesting paths. Along these routes people can find protected trees that are hundreds of years old, viewpoints and collpas (clay licks) or places where mammals come to feed. **We protect large Amazonian trees, which are estimated to be between 100 and 1000 years old.** Such trees have been identified, georeferenced and systematized in a database in order to carry out the forest monitoring. **Our aim is to take care of the trees due to their unfathomable contribution to the ecosystem; not only because of the tons of carbon they have accumulated within them, but also because they provide a nesting place for several species of birds, a home for thousands of insects, and because they are a refuge and a food source for mammals and other wild animals.** The trees fulfill a fundamental roll in the water cycle as they each draw approximately a thousand liters daily from the subsoil into the atmosphere, which promotes cloud formation by evapotranspiration.

RESEARCH



OUR WORK

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RESEARCH

MAMMALS

We have registered **29** species of mammals, not including bats nor small rodents (rats, mice). This wealth of species shows that the ecosystem is well preserved. As there is an abundance of prey (e.g., rodents and deer), up to **5** species of felines can be noted (jaguar, puma, yaguarundi, tigrillo and ocelot).

AMPHIBIANS AND REPTILES

So far, we have identified **69** species in the area: **38** amphibians and **31** reptiles.

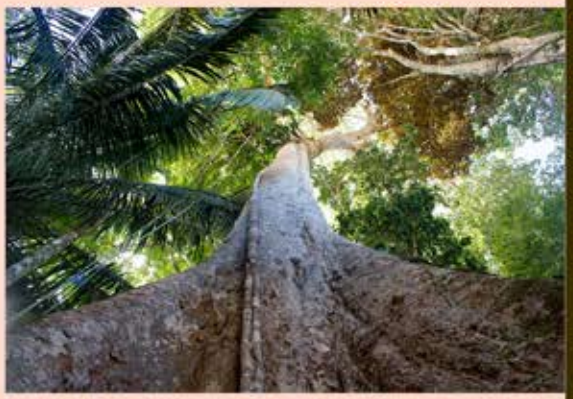
BIRDS

We have registered **259** species representing **24** orders and **63** families. This proves that the forest of ARBIO Peru could potentially be used for bird watching tourism.

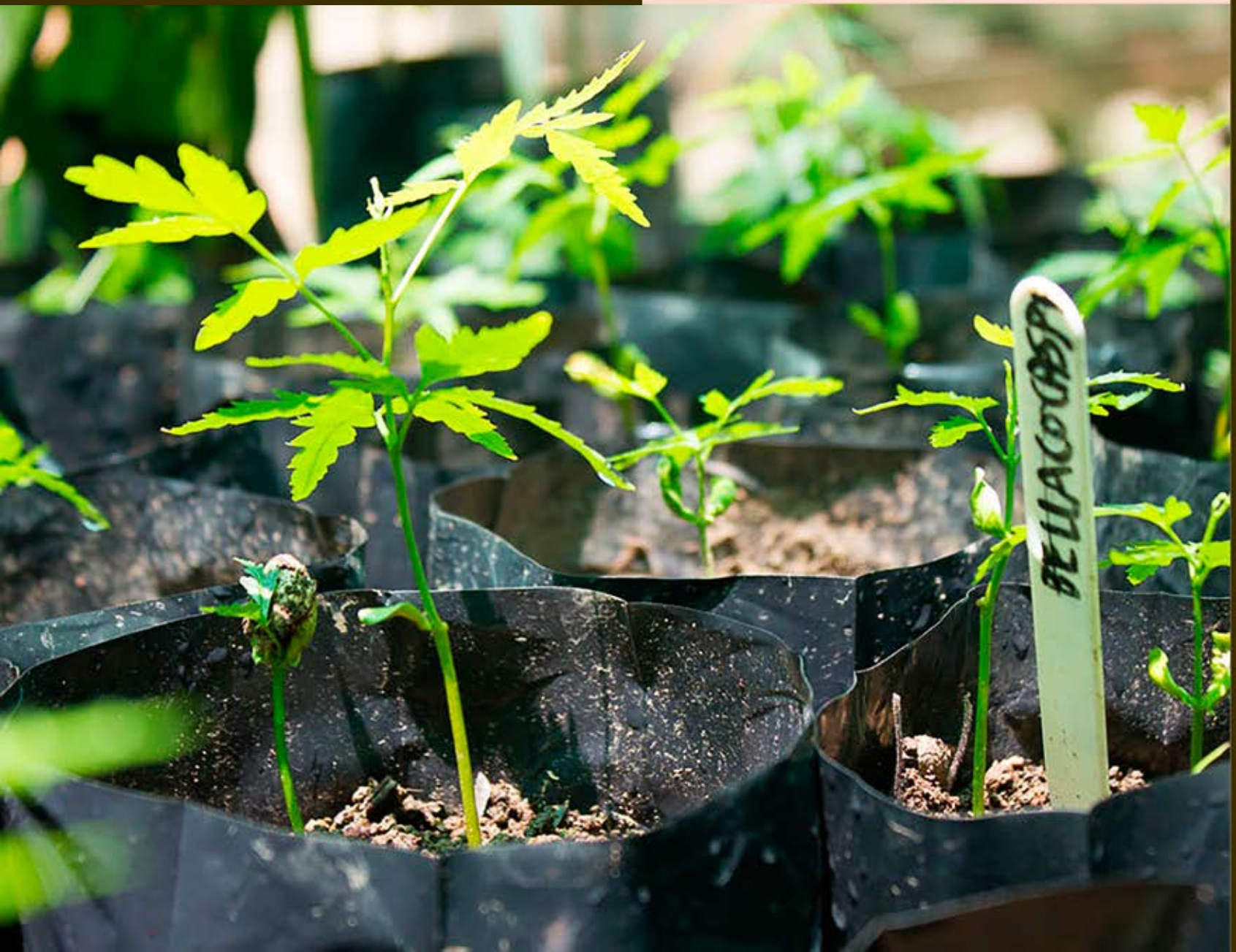
RESEARCH

FLORA- LARGE AMAZONIAN TREES

Since 2012 we have carried out a tree census in experimental 6 hectares parcels. In 2017 we started to prioritize the census of species at risk due to the value of their wood, and of those important species to the wild fauna. **We have obtained a registry of 294 outstanding trees belonging to 78 different species in 25 families in 100 hectares of forest.** The most abundant family was the FABACEAE, secondly, MORACEAE, followed by the EUPHORBIACEAE and SAPOTACEAE. The most common species are: the Shihuahuaco (*Dipteryx micrantha*), Catahua (*Hura crepitans*), Manchinga (*Brosimun alicastrum*), Pouteria spp (*Caimitos*) and red Quinilla (*Manilkara bidentata*). The species most at risk at the moment is the Shihuahuaco. In the Arbio forest we are monitoring and taking care of this species and have found that 70% of these trees are over 700 years old.



ANALOG FORESTRY



OUR WORK

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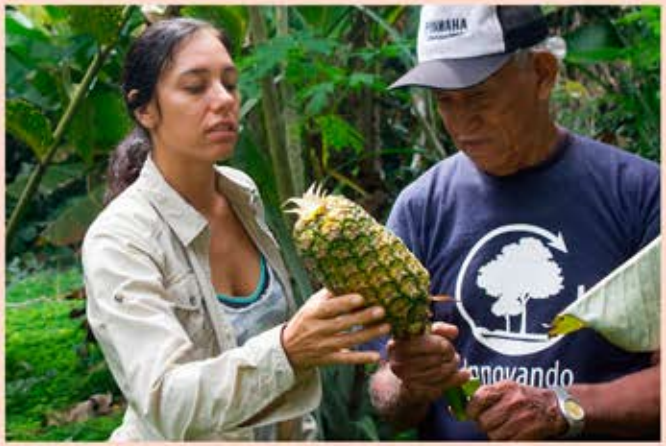
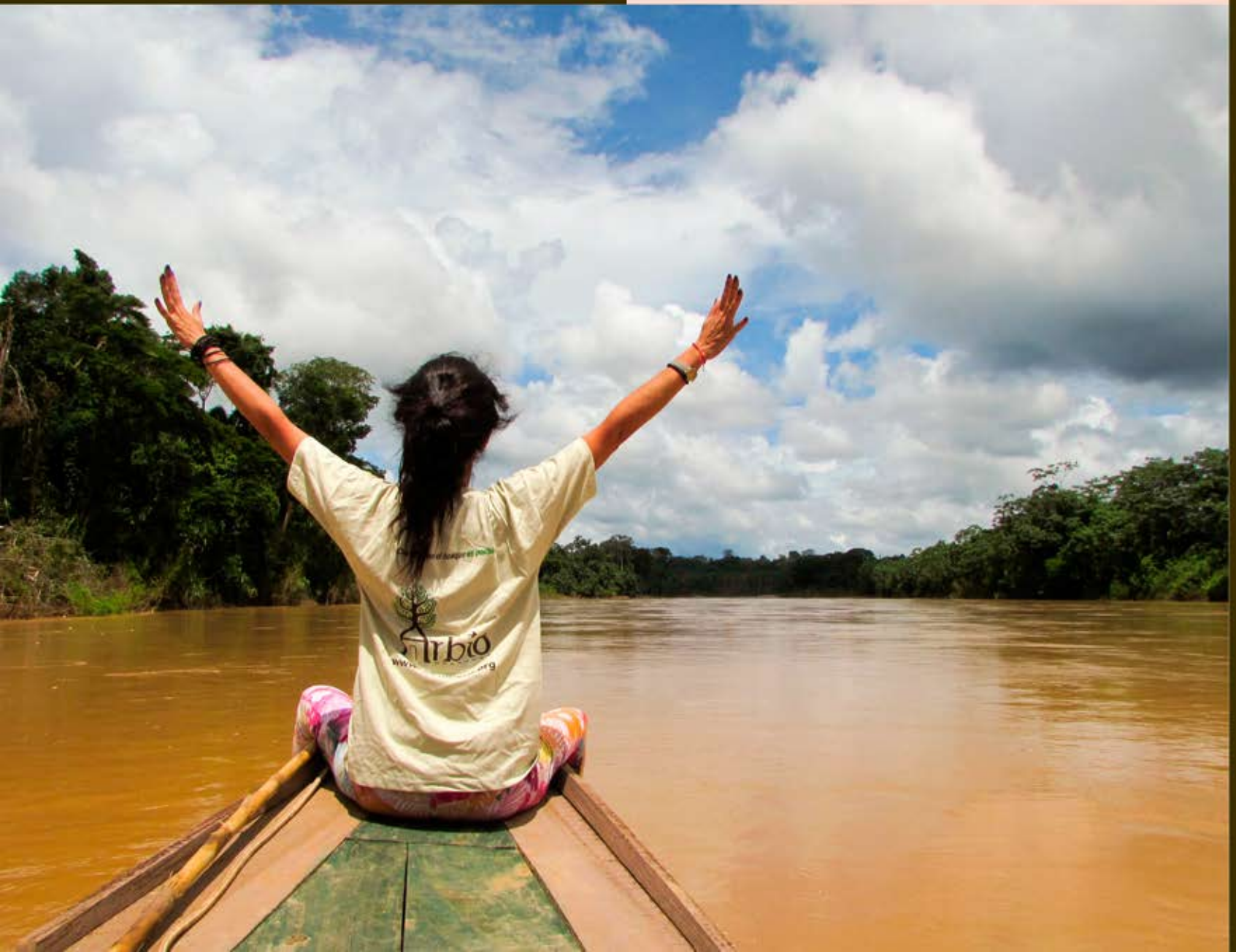
ANALOG FORESTRY



We promote analog forestry (AF) as an ecological restoration tool in the Madre de Dios region. AF uses natural forests as a guide to create ecologically stable and socioeconomically productive landscapes. This is a complex and holistic form of forestry, which reduces the use of external products such as agrochemicals and fossil fuels and attempts to eliminate them by strengthening ecological mechanisms to increase resilience and productivity. **Since 2012 Arbio Peru has been a member of the International Analog Forestry Network (IAFN) and has developed joint research and training activities.** We have a nursery and a model parcel found at km 4.5 of the Tambopata corridor in Puerto Maldonado where a pilot plantation of 28 Amazonian medicinal and fruit species has been set up.

WILD EXPERIENCE



OUR WORK

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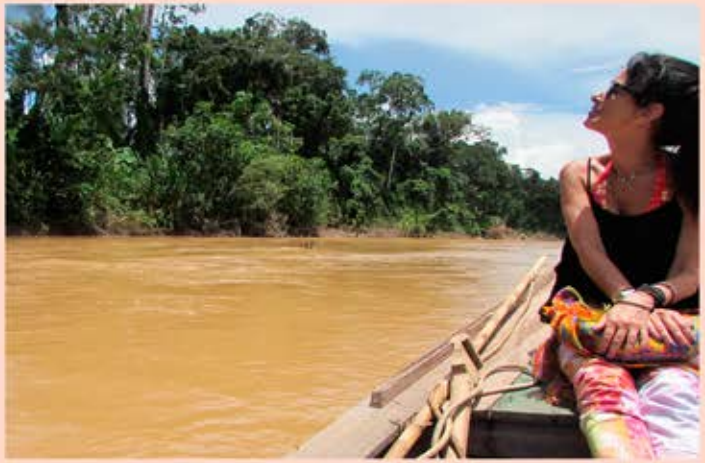
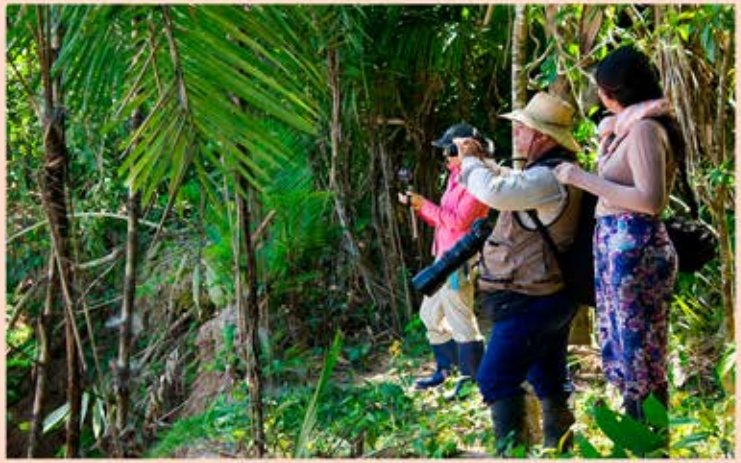
WILD EXPERIENCE

CONSERVATION EXPEDITIONS





Our primary goal is to ensure the conservation of the ecosystem, and our tourism operation is a supporting strategy to the activities of forest management. The visits we organize are considered EXPEDITIONS rather than package tours. Thus, each visit has defined objectives, as well as different planned tasks in order to gain an inside knowledge of the ecology of the forest and by getting integrated into the research activities.

RESULTS WHAT HAVE WE ACHIEVED

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PROTECTION OF THE FOREST

The effective protection of

916 hectares of Amazonian forest in Madre de Dios with the permanent presence of forest rangers in the area for over **8** consecutive years.

The training of field personnel and the implementation of permanent land and fluvial patrolling in the area.

The construction of a biological station with local materials, infrastructure for basic services, a dining room, bathrooms, and a watchtower. Total constructed area is approximately

400 m2

Basic equipment of operations:

- New boat
- Generator set
- UHF radio for communications
- Underground water pumping system

Network of footpaths:

12 km

of trails and paths in the forest for patrolling and as a route for researchers and visitors.

RESULTS WHAT HAVE WE ACHIEVED

ANNUAL REPORT 2018

TECHNOLOGY TO PROTECT THE FOREST

Development and implementation since

2012

of a unique forest protection system using a micro-financing strategy that allows any Internet user to choose a hectare of Amazonian forest to sponsor

The development of the first prototype of an online system to protect large Amazonian trees **2018**

The development in

2017

of the app

CensArbol 2.1

to record and systematize field data

RESULTS WHAT HAVE WE ACHIEVED

ANNUAL REPORT 2018

RESEARCH: LEARNING ABOUT WHAT WE PROTECT

Forest inventory of

300

large trees of species at risk of illegal logging in

100

hectares of the Arbio forest with the systematization of information about each tree.

Constant monitoring of mammals using camera traps over

3 consecutive **years**

Study and examination of wildlife in the area:

27 species of mammals (jaguars, pumas, ocelots, deer and tapirs),

60 species of amphibians and reptiles, and

250 species of birds. Audio-visual record.

RESULTS WHAT HAVE WE ACHIEVED

ALTERNATIVES FOR RESTORATION AND SUSTAINABILITY

Development of an analog forestry model: construction of a nursery and set up of a pilot plantation of

28

Amazonian medicinal and fruit species in Puerto Maldonado, Madre de Dios.

Development and exportation of forest products to the European market: copoazú, carambola (starfruit) and arazá jams, chestnuts, and Amazonian pepper sauces for

3 consecutive years

RESULTS WHAT HAVE WE ACHIEVED

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SOCIAL ISSUES

Training of 30 families

of chestnut growers and farmers in Puerto Maldonado in techniques of forest restration using analog forestry

Development of activities for children and cooperation with the neighboring community in the Las Piedras river basin for

3 consecutive years

Training in the restoration of ecosystems for rural communities in Paraguay and Guatemala in conjunction with the International Network of Analog Forestry (INAF)

RESULTS WHAT HAVE WE ACHIEVED

ANNUAL REPORT 2018

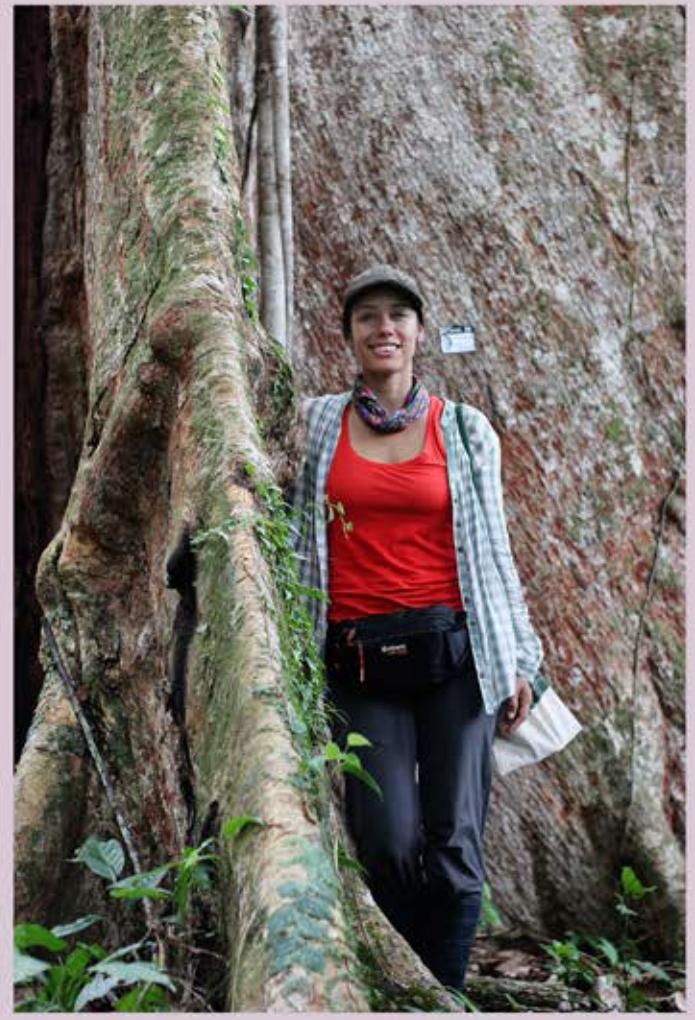
IMPORTANT RECOGNITION

International prize in 2018:

The Jane Goodall Hope and Inspiration Ranger Award for the work that

Tatiana Espinosa

carried out with ARBIO in the Peruvian Amazon, the first person in Latin America to receive this prize.



COMMUNICATIONS

7.2 k followers

4.3 k followers

MISELVA CHANNEL

Development of the MISELVA channel on social media to spread knowledge about forestry science and the importance of the Amazonian ecosystem.

20 notes, interviews and/or news articles about the work of Arbio Peru (at national and international levels).

OUR PROJECTS

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NATIONAL PRIVATE INSTITUTIONS			
FUNDER	NAME OF THE PROJECT	OBJECTIVE	RUN TIME
Own resources	Biological station in the forest concession	Construction and installation of basic infrastructure: cabins, control tower and services.	2011 - 2014
Own resources	Researching flora and fauna, tree census	To obtain data on the flora and fauna resources of the forest	2012 - 2015
Association for the Conservation of the Amazonian River Basin - ACCA (I-CAA-USAID)	Biological Monitoring of the Manu-Tambopata conservation corridor	Evaluation of mammals, birds, fish, reptiles and amphibians	2013 - 2014
ANIA	Forest inventory and evaluation of wild life in two forests managed by schools in Tahuamanu, Madre de Dios	To obtain data for educational footpaths in Tierras de Niños (Tinis)	2017

OUR PROJECTS

NATIONAL STATE INSTITUTIONS			
FUNDER	NAME OF THE PROJECT	OBJECTIVE	RUN TIME
FINCYT	Adaptation of a productive conservation model based on the principles of analog forestry in the Madre de Dios region	Implementation of a forest nursery with Amazonian species and a model plantation	2014 - 2016
Innovate Peru	An ecotourism model using sponsorship of the forest in the Las Piedras river basin, Tambopata	To implement and improve the infrastructure and activities of ecotourism	2017 - 2019
Innovate Peru	Diffusion and popularization of the science of the Amazonian forest	To communicate the importance of the Amazonian ecosystem to teenagers in Lima	2017-2018

OUR PROJECTS

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INTERNATIONAL PRIVATE FOUNDATIONS

FUNDER	NAME OF THE PROJECT	OBJECTIVE	RUN TIME
International Analog Forestry Network (Costa Rica)	A seed fund for the study of an AF model	Creation of an analog forestry model parcel in Madre de Dios	2013 - 2014
International Analog Forestry Network (Costa Rica)	Training workshop on productive forests to families of chestnut growers and farmers in Madre de Dios	Training 30 families in analog forestry techniques	DEC 2013
Arbio Italy	Research and development of Amazonian products for the "edible forest" project	Development of forest products to export	2013 - 2015
EQUOMERCATO (ITALY)	Commercialization towards a fair-trade market: exporting Amazonian products to Italy	Export of: Chestnuts, Copoazu, Carambola and Arazá jams.	2014 - 2016
NANDO PERETTI FOUNDATION - NPF (ITALY)	Protection and conservation of the biodiversity of native species Vanilla spp. (*Orchidaceae*)	Investigation of the native species of Vanilla spp and its pollination strategies . Madre de Dios.	2017 - 2018

OUR AGREEMENTS

WILD FORESTS & FAUNA

To set up activities of mutual collaboration with this organization with its headquarters in Washington, which has operations in Peru in an area neighboring the ArbioPeru forest in the Las Piedras river basin managed by ARCAmazon.

TELEMATICA
Tecnología Integrada GIS

Having a monitoring tool for deforestation in the area of influence of our project through an ArcGIS license in order to engage civil society with the conservation of the Amazon through SIG tools that allow the adoption of hectares of forest and large Amazonian trees at risk of illegal logging.

Innóvate Perú

Program of the Ministry of the Production that co-finances projects of innovation and entrepreneurship to increase business productivity. Forest sponsorship has co-financed the projects of analog forestry, diffusion of forestry science, and ecotourism

ASOCIACIÓN DE GUARDAPARQUES DEL PERÚ
AGP - PERÚ

To form a partnership framework with the association that stands for all forest rangers in the country.

ET LUX IN TENEBRIS LUCET
MCMXVII
PUCP

Collaboration agreement for the development of an updated version of the hectare sponsorship system.

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