

INKATERRA

AUTHENTIC NATURE TRAVEL IN PERU
SINCE 1975

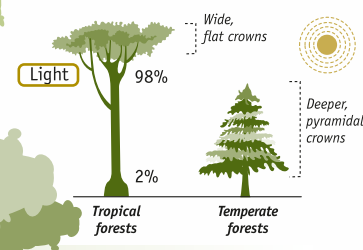
344m long
2 towers
8 platforms
7 bridges

VERTICAL STRATIFICATION

In Amazonian rainforests, the average size of the tallest trees ranges from 30 to 45 meters (98.4 to 147.6 feet). A few trees grow above these limits, reaching 60 meters (199 feet), and many herbs, bushes, and small trees grow beneath them. The conditions from the forest floor to the highest treetop change noticeably as one ascends, offering a large number and variety of habitats for rainforest species. To explain its complexity, researchers have suggested the concept of vertical stratification of the rainforest.

EMERGENT TREES

Emergent trees refers to the crowns of the tallest trees, such as the lupunas, the Brazil nut trees, and the shihuahuaco, which tower above the canopy. Numerous epiphytes and other organisms that live in these treetops have adapted to the high light availability and to the enormous climatic changes to which this stratum, or layer, is subjected.

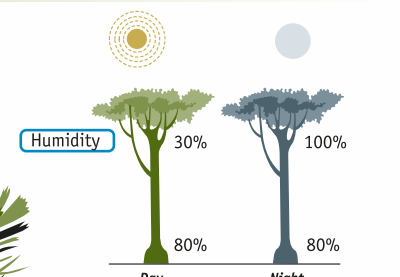


The crowns of the canopy trees can reach a diameter as large as 25 meters (82 feet), covering as many as 100 smaller trees in the 500-square-meter (5,381-square-foot) area of shade around them.

THE CANOPY

The canopy is made up of the aggregation of continuous treetops intertwined with each other, giving the impression that the rainforest is an immense green carpet. In this layer, there is an abundance of leaves, flowers, and fruits that attract a great diversity of specialized animals. These animals develop a complex web of food relationships.

14 tons of decomposing organic material per hectare (2.7 acres) is produced in the canopy. It forms a layer that regulates fluctuations in temperature and moisture.



THE UNDERSTORY

The understory is made up of growing trees, palms, bushes, and herbaceous plants. When one of the huge rainforest trees falls, there is a sudden growth of plants in this stratum. Fierce competition to take possession of the new clearing contributes to maintaining the dynamic of tropical rainforests, as it allows new species to become dominant.

Fork-tailed Palm-Swift
Tachornis squamata
13.5 cm (5.3 inches)

20% of the nutrients of the Amazonian forest are found in the forest floor.

THE FOREST FLOOR

The forest floor contains a superficial layer of organic material, from which plants obtain their nutrients. It is estimated that 550 different species of plants can develop per hectare (2.7 acres) (datum: Reserva Ecológica Inkaterra). It is the beginning of life even for the giant emergent trees, which also belonged to this stratum when they were seedlings. In this stratum intense animal life—mostly ants and termites—develops along the remains of fallen leaves and trunks. These animals accelerate the decomposition of organic material, producing natural nutrients.

THE LAST BIOLOGICAL FRONTIER. This system of bridges, platforms, and towers offers an expansive window onto the world of the tropical rainforest. It enables us to better understand life, the cycles, and the interdependent relationships among the various organisms inhabiting the canopy. Inkaterra Canopy is considered to be one of the most modern and sophisticated in the world, both due to its camouflage design and because the specialists who built it used ecological materials to prevent negative impact on the environment. The canopy walk enables visitors to enjoy an in-depth look at one of the most productive ecosystems in the rainforest: an enormous food factory where key events for the development of life come together. The Inkaterra Canopy was financed by the United Nations' Global Environment Facility (GEF) and by the World Bank's International Finance Corporation (IFC) with the support of the National Geographic Society.

Platform 1
Tree: Yellow Mombin
Spondias mombin L.
Height: 22,10 m

Platform 2
Tree: Yellow Mombin
Spondias mombin
Height: 21,80 m

Platform 3
Tree: Mastate
Poulsenia armata
Height: 22,20 m

Platform 4
Tree: Mastate
Poulsenia armata
Height: 23,15 m

Platform 5
Tree: Manchilinga
Brosimum alcastrum
Height: 23,40 m

Platform 6
Tree: Snakewood
Clusia racemosa
Height: 22,60 m

Platform 7
Tree: Mastate
Poulsenia armata
Height: 22,80 m

Tower 1
38 m

Tower 2
29 m

Bridge 1
Long: 18,50 m

Bridge 2
Long: 35,47 m

Bridge 3
Long: 29,17 m

Bridge 4
Long: 40,78 m

Bridge 5
Long: 19,59 m

Bridge 6
Long: 21,12 m

Bridge 7
Long: 28,10 m

Ant gardens. Ant nests sustaining complete plant communities. Both ants and plants benefit from this association.

Climbing plant. *Magfaryena uncuta*

Black-billed Thrush
Turdus ignobilis
24 cm

Black-faced catbird
Camptoplin maculiventris
20.5 cm

Blue and Yellow Macaw
Ara ararauna
80-95 cm

Scarlet Macaw
Ara macao
83 cm

Mealy Parrot
Amazona
farinosa
41 cm

Canopy Suite
Tree: Cepanchilia
Sibania oppositifolia
Height: 22,30 m

Termite nest.
Nesocleptes sp.

Caviler's Toucan
Ramphastos tocanus
53-57 cm

Black-fronted Nunbird
Manota nigrifrons
26-29 cm

Golden-collared Toucanet
Selandria reinwardtii
30-33 cm

Tropical Kingbird
Tyrannus melancholicus
20-22 cm

White-tailed Jay
Cyanocorax mystacis
32 cm

Short-Crested Flycatcher
Myiarchus ferox
19 cm

Boat-billed Flycatcher
Hegarimachus platyanus
22 cm

Barrid Antshrike
Thamnophilus dubius
15-16 cm

Brown-throated Three-toed Sloth
Brodypus variegatus
40-75 cm

Saddle-back Tamarin
Saguinus fuscicollis
17.5-27 cm
Tail: 25-38 cm

Pygmy (Silky) Anteater
Cyclops didactylus
15.4-20.5 cm
Tail: 16-22 cm

Mouse Opossum
Marmosops sp.
10-15 cm

Ant nest. Locally known as "Goat's Beard." It is inhabited by extremely aggressive ants that protect the tangarara tree in exchange for refuge and food.

Blue-headed Parrot
Pionus menestrus
25 cm

Moss.
Briophyta

Orchid.
Pleurothallis sp.

Epiphyte
Anthurium sp.

Fern.
Asplenium sp.

Liana.
Celtis iguanae

Cactaceae.
Disocactus sp.

LIANA. *Celtis iguanae*

Cactaceae. *Disocactus* sp.

LOFTY GARDENS
The rainforest canopy provides the necessary conditions for most vegetal life to develop. The flora of this layer includes simple forms, such as fungi, mosses, and ferns, as well as more complicated flora, such as cacti, bromeliads, and orchids. Canopy plants that grow and develop all their lives without having contact with the ground are called epiphytes, while those whose roots manage to touch the ground at some stage of their lives are called hemiepiphytes. Both fulfill a wide variety of essential functions. For example, they regulate the moisture in the canopy, especially during the dry seasons. The mosses retain water that comes from rain, which causes them to develop like a moist carpet on the branches of the canopy, making a rich substratum for the growth of other plants. Some bromeliads act as small ecosystems known as phytotelmis, where they provide water to different organisms (microorganisms, algae, insect larvae, and amphibians), making up small communities.

ANTS AND PLANTS, INC.
In the course of almost 200 million years of rainforest evolution, the organisms that live there have developed diverse survival strategies. For example, certain vines and trees possess substances that attract ants. The queen uses the interior of the plant to lay her eggs and form a colony. Later, the ants patrol the plant, protecting it from animal predators and other plants that try to develop close by. The ants help the plant by preventing competition, and they obtain food and protection in return.

INKATERRA CANOPY IN FIGURES
Research and inventories of Inkaterra's Ecological Reserve have been conducted since 1978. Among the highlights are the inventory of insects by Professor Edward O. Wilson of Harvard University (who certified that Reserva Ecológica Inkaterra is the area with the greatest richness of ants in the world), the inventory of plants carried out by Dr. Alwyn Gentry of the Missouri Botanical Garden (with a registry of 1,266 species of vascular plants), the study of amphibians and reptiles by Dr. William Duellman (published by Cornell University Press in a 433-page book), the recording of the songs of the birds of the canopy carried out by the Peruvian biologist Edwin Salazar, and several studies published by the University of Kansas. Wildlife studies are still carried out for the purpose of establishing a continuing plan for tourism.

135 species of mammals

540 species of birds

151 species of herpetological fauna

362 species of ants

313 species of butterflies

322 species of homopterous insects

442 species of spiders

44 species of mollusks

Fashaco
Paña
Peñe de mano.
Liána

Dijo de taro
Huevo de coto
Huayruro.
Medicinal
Shihuahuaco
Shapaja palm. Its fruit is a rich source of nutrients even for man.
Misa colorada

THE ANIMALS HIGH IN THE CANOPY

The animals of the canopy play a very important role in rainforest ecology. They are the great pollinators and seed dispersers and their contribution to the development of the rainforest is fundamental. Thanks to them, other animals of the understory and forest floor have easier access to the fruit that falls from up above, a product of the activity of the canopy animals in the treetops.



THE ABUNDANCE OF LIFE

The fight for life in the rainforest is very intense. For plants, their fruit assures their survival. Animals come to eat the calorie-rich fruits. On the other hand, many insects, birds, and bats feed on flower nectar, and while doing so, they harvest the pollen. They then propagate this during their constant search for nectar, fostering plant reproduction. Among the most efficient seed scatterers are birds such as orioles, trogons, tanagers, and toucans; primates and rodents. On the other hand, many insects, birds, and bats feed on flower nectar, and while doing so, they harvest the pollen. They then propagate this during their constant search for nectar, fostering plant reproduction.





SAFETY

The Inkaterra Canopy is considered one of the most modern and sophisticated in the world. It is also one of the safest, due to the use of special cables and lateral mesh on all the bridges and because of the construction of solid vertical towers. It is made from the most resistant woods in the Amazon and the best industrial materials brought from the United States. The entire structure has a lifetime of more than 30 years under Amazonian conditions, although the steel cables can last longer.

Lateral mesh a meter-and-a-half high gives stability and safety.

The crosspieces of the bridge are made of the wood of the *shihuaucuo*, *Dypteryx micrantha*.

Stainless steel cables join the tree to the ground.

The platforms are securely fastened to the tree trunk using a system of beams to provide greater stability and safety.

The platforms are built of the wood of the *quinilla*, *Manilkara bidentata*.

Two strong, flexible stainless steel cables are joined at the ends to the platforms.

Some of the trees supporting the platforms are bound together by a cable. Their job is to move together against strong opposing movements.



CUSHIONING THE IMPACT

To sustain each bridge, the builders decided to use bolts that run through the tree trunks, instead of brackets or clamps. The concern was that this second method could complicate both the primary (inward) and the secondary (outward) free growth of the tree. Also, using bolts avoids subjecting the trees to the strong ecological impact that could have been provoked by periodic adjustment of brackets or clamps in order to guarantee bridge safety.

In using the bolt system, however, it was important to choose trees that have defense mechanisms effective against attacks of fungi and bacteria. The trees selected will continue growing freely even above the bolts, without jeopardizing the tension and stability of the cables that hold up the whole bridge system.

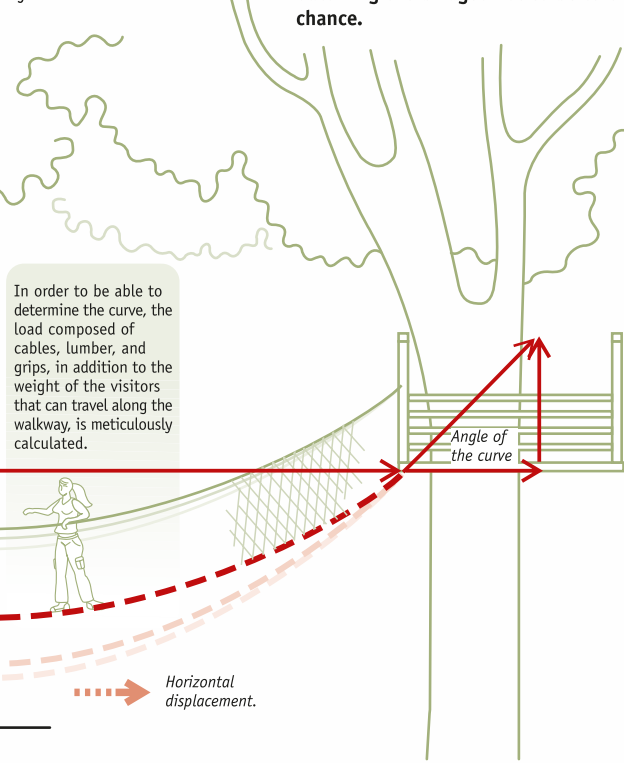
Platform 6
Snakewood, or marblewood *Clarisia racemosa*, also known as the "bleeding tree," owes its name to the resins it rapidly produces to prevent infections that would otherwise cause it to decompose.



Animals painted with natural dyes on a vegetal fiber made from the bark of *yanchama*, *Passiflora armata*.

THE CATENARY CURVE

The angle, length or tension of each bridge obeys complicated mathematical calculations, to obtain that the curves outlining the bridges not to be left to chance.



In order to be able to determine the curve, the load composed of cables, lumber, and grips, in addition to the weight of the visitors that can travel along the walkway, is meticulously calculated.

Horizontal distance between the two fixation points.

The curve outlining the bridge.

Vertical displacement.

Horizontal displacement.

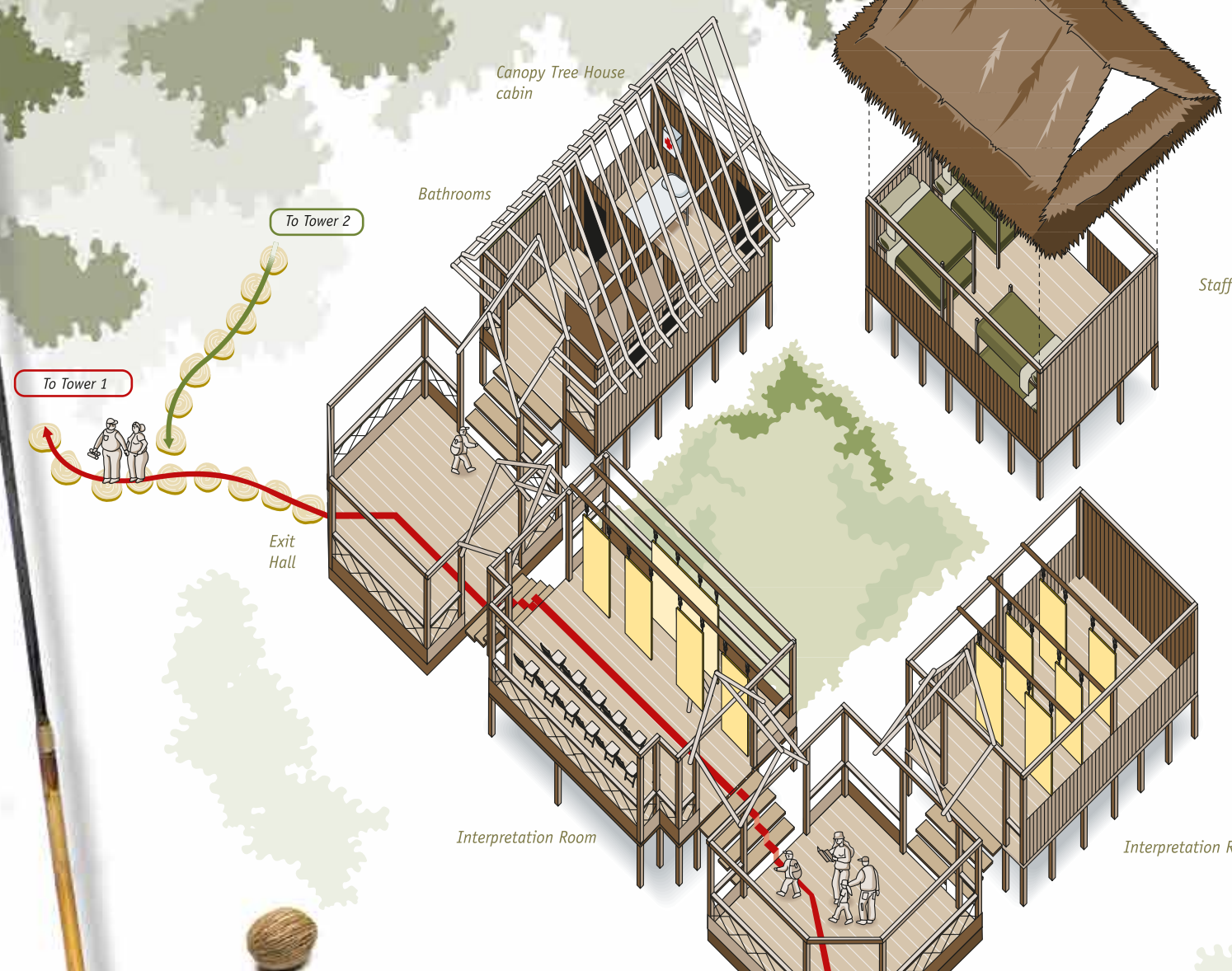
INKATERRA
Lima Main Office
Avenida 177
Lima 18 - Peru
T. +51 1 610 0404
F. +51 1 422 4701
central@inkaterra.com

Cusco Main Office
Plaza Los Nazarenos 167 Second Floor
Cusco - Peru
T. +51 84 24 5314 / +51 84 24 5315
F. +51 84 24 4669

INFOGRAPHY CREATED BY: DOC SAC FOR INKATERRA.
EDITING AND PRODUCTION: XABIER DIAZ DE ERIBO / CANOPY ILLUSTRATION: ALONSO RUIZ / BIRD AND MAMMAL ILLUSTRATIONS: OSCAR VILCA / COORDINATION: SANDRA MASIAS / INFORMATION: ITA (INKATERRA ASOCIACIÓN) / INKATERRA RESERVA AMAZÓNICA GUIDE TEAM

SOURCES: "Guía Interpretativa del Dose" / "Interpretive Guide to the Canopy" / ITA / "Guía Interpretativa del Canopy Walkway en Reserva Amazónica" / "Interpretative Guide to the Canopy Walkway in Reserva Amazónica" / Edwin Sefariz and Jorge Lingán / "Reserva Canopy Walkways" / PH. WILSON / "El ojo verde" / "The Green Eye" / Amazonian Conservation Program / "Program for the Protection of Biological Resources in the Peruvian Amazon" / Alliance for Conservation and the Environment Foundation / "Serpiente de Agua" / "The Water Serpent" / Geoffa Lindell and Alexandre Soutinho

Printed in June 2019



THE INTERPRETATION CENTER

Here, visitors can learn about the ecological features along the canopy walk, as well as about the environment, the design, and the construction of the Inkaterra Canopy and the support work ITA carries out in some of the communities of the zone.



RECOMMENDATIONS AND EQUIPMENT NEEDED

Binoculars. For birdwatching

Backpack. It is highly recommended that you avoid carrying objects in your hands or hanging from your neck, since they can get caught in the lateral mesh on the bridges.

Flashlight. For twilight visits.

Insect repellent. Only natural insect repellents, such as citronella, are permitted, since artificial repellents affect the wildlife, and their corrosive ingredients can also damage the mesh and cables.

Camera.

Arrows and lances made of cane and huicungo wood, used for fishing.

Necklaces of different kinds of seeds.

Tapir or "sachavaca" made of balsa wood.

Capibara, Hydrochoerus hydrochoerus, the world's largest rodent.

Arrow with a feather from the harpy eagle, one of the largest eagles in the world.

Paca or "Pacuro", *Agouti paca*.

Giant Anteater, *Mymecophaga tridactyla*.

Armadillo or "carachupa", *Dasylops sp.*

1,50 m (4,9 feet)

The structure by which the suspension cable is joined to the ground has a helicoidal, or spiral-shaped, system that prevents it from detaching from the place where it is joined, despite cable tension.

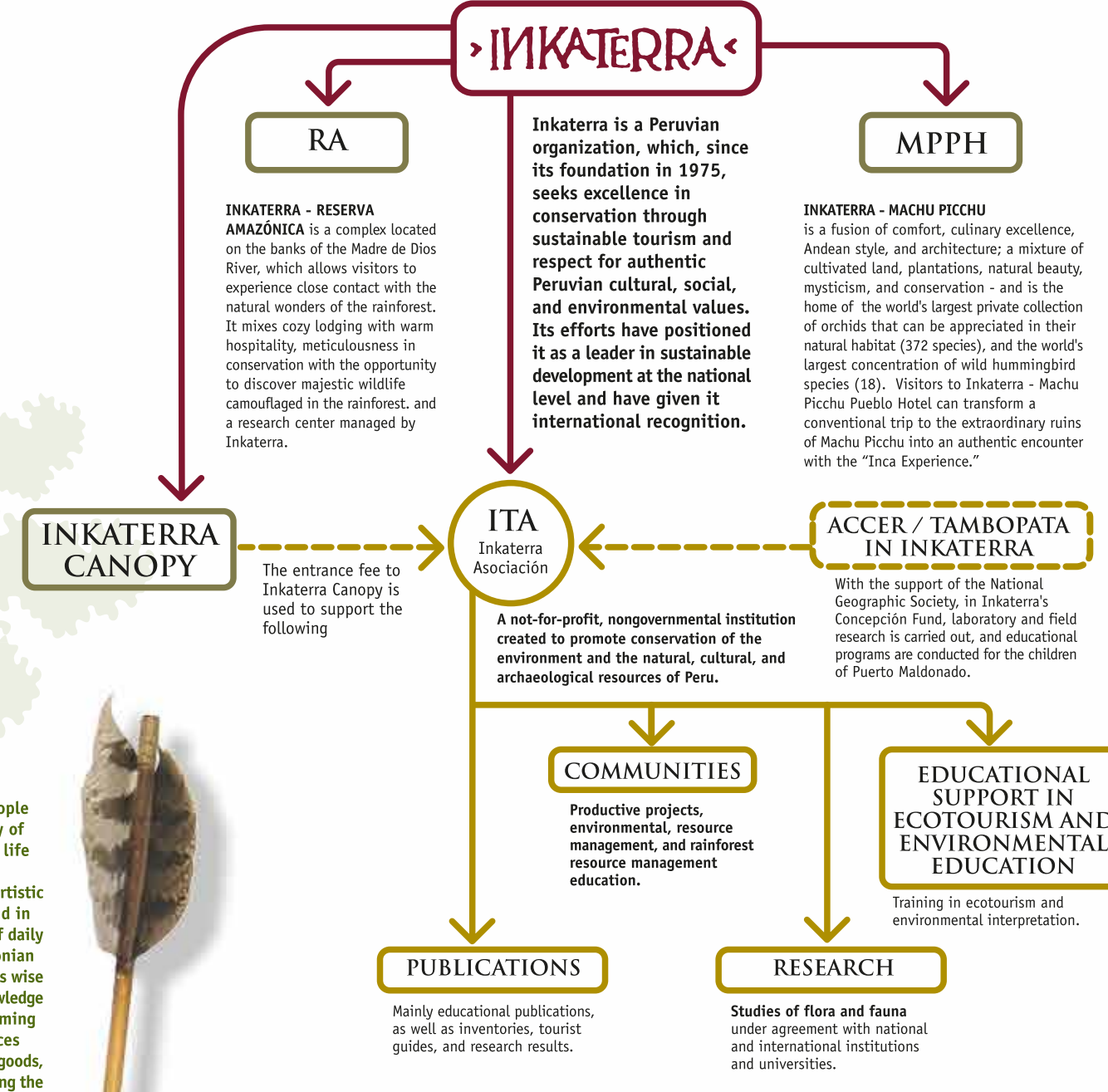
Eja paddle made of "lizard wood", *Calophyllum brasiliense*.

BENEFITS FROM TOURISM

Inkaterra Canopy forms part of an integral project in which the benefits from tourism are earmarked for: a) conservation and social development projects in five adjacent communities along the Madre de Dios River; and b) scientific study and production of educational materials, inventories, tourist guidebooks, and research materials.



Comunidad Micaela Bastidas, Comunidad Isla Rotin, Comunidad Juan Velasco, Comunidad Juan Pablo, CC.NN. Palma Real



INKATERRA CANOPY

RA
INKATERRA - RESERVA AMAZÓNICA is a complex located on the banks of the Madre de Dios River, which allows visitors to experience close contact with the natural wonders of the rainforest. It mixes cozy lodging with warm hospitality, meticulousness in conservation with the opportunity to discover majestic wildlife camouflaged in the rainforest, and a research center managed by Inkaterra.

INKATERRA CANOPY
The entrance fee to Inkaterra Canopy is used to support the following:

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

INKATERRA CANOPY

THE TRUE PEOPLE

This is what the Eje Eja indigenous people of the Madre de Dios call themselves. They were previously known as the Huarayos or Chamas, however today both of those names have pejorative overtones. Eje Eja is the only member of the Takana linguistic family represented in Peru. For the Eje Eja, the universe is composed of different worlds: Ena (water), Meshi (earth), Eya (sky), and the underworlds Meshinobitje (inside the earth) and Enätipaje (inside the water), plus an intermediate world Eyawastje, which connects the worlds of earth and sky. The Eje Eja lived in this region for centuries and make up a population of nearly 1,000 people. Data concerning their history is found in the chronicles of travelers, missionaries, and conquerors. They are a hunting, fishing, and gathering people who also devote themselves to Brazil nut collection, the cultivation of plots of land, and tourist and commercial activities. They were nomadic until the 1970s. Traditional accounts tell that since time immemorial the territory of the Eje Eja was situated between kuelobiasje (the headwaters of the Bahujá) and echiñatiasje (where the rivers go to deposit their waters), in Bolivia. Many natives believe that when an Eje Eja dies his or her soul returns to the Tambopata River.

INKATERRA CANOPY TAMBOPATA-PERU

inkaterra.com