

Footprint Adventures

the way to go.....



Travel Itinerary



Piranha Eco Lodge Rainforest Adventure Station

Rainforests now cover less than 7% of Earth's land surface but they are home to over 50% of all known species of living organisms. And some researchers think our current number of known species may vastly underestimate Earth's true total, and that millions more may exist—especially in tropical rainforests—waiting to be discovered.

On the 10 square kilometres Private Biological Reserve were found to be home of 300 species of birds, twice the number living in the broad-leaved forests of all of North America. One tree in our Private Reserve may contain more species of ants than found in the entire United Kingdom.

But for all this wealth of organisms, there's a constant struggle for scarce resources. Plants fight for raw materials, and life finds ingenious ways to take advantage of every niche and every scrap of energy. Beneath the vast spreading canopy there are, in fact, many very different worlds.

This overview provides portraits of the trees, plants, animals and insects of the Amazon Rainforest. It sketches the relationships which link these organisms together in an intricate web of life. The more distant you are from Manaus, the more wildlife and untouched rainforest you will find!!!! Jungle is remaining and destroyed rainforest!!

About the Piranha Reserve With 103 thousand hectares (255 thousand acres), it is located on the left bank of the Solimões River, actually the Upper Amazon River, near the mouth of the Manacapuru River, inserted in the Middle Amazonian corridor, and as such, it is a priority conservation area in the National Project of Ecological Corridors. The Piranha reserve was created in 1997 with the objective to protect the richness of the area and the different ecosystems, as well as to promote sustainable development and improvement of the quality of life of the several local communities, also providing an enormous potential for research, eco tourism and environmental education for the local dwellers.

The Flotel Piranha Eco Lodge, your Rainforest Adventure Station, consists of a flat bottom barge in the middle of one of the lakes where it is situated, adding to its uniqueness under the open sky, surrounded by the lush green rainforest and its so many different sounds that come out of the rainforest. There's all the necessary infrastructure, consisting of 16 apartments only, all with screens for mosquito's, mosquito nets over the beds and the apartments mostly consisting of two single beds. All rooms have a private bathroom, with a naturally heated shower and wash basin, besides the Restaurant with mosquito/light bug screen. Maximum capacity of 32 travelers in twin rooms.

The restaurant has a capacity for 40 persons and is naturally specialized in the regional cuisine with emphasis on the multiple varieties of local fresh water fish. Due to the gigantic proportions of The Piranha Wildlife Reserve, around 103.000 ha (225.00 acres), we developed a brand new concept:

Reception and bar - with comfortable sofas, hammocks and chairs, ideal to relax before and after the tours, to have a conversation with newly met friends, accompanied by regional, national and international refreshing drinks. There's also a observation tower on the barge itself to get falcon eye views from the area. The roof being of regional amazonian architecture - rustic and completely protected by screens against mosquitos and any other light attracted bugs, adding to a great atmosphere in order for you to enjoy the delicious regional kitchen.

The generator of 110V is available just for some hours during the evening hours. Alternative Sources of energy are also being used, like torches or 12 V lights in the bathroom. There is no hot water (only naturally heated) in which the water temperature is usually between 26-32° Celsius throughout the whole year. No guarantee of air conditioning in any means of transportation, not even in the vans and on the barge itself.

"We Move and We Lodge" Meaning that, a large and specifically for river and lake navigation built flat bottom barge, will from month to month move around the 180 lakes to take you to the best spots for wildlife observation, depending on the water level, which may rise up to 8 meters in the flooded season. Our unique concession to operate within this Sustainable Development Reserve, from which visiting the all so many different lakes, you will most likely never run into another guest exploring the region. We are a Rainforest Adventure Station that moves...

And Much More But the Piranha Reserve is not only that mentioned here above. It is an intense cultural experience that seeks to conserve the culture of human being that have shared the rainforest with the animals and plants throughout the centuries. The local people of the area have a profound knowledge of medicinal plants and forest life in general.

Main attractions

- Bird Watching
- Wildlife Observation
- Environmental trekking
- Tours to flooded areas and nesting grounds
- Catch & Release Fishing
- Visit to the Natives Communities
- Special Night Adventure Tours
- 180 Lakes to Explore !...if you can afford the time needed...

Transfers

The transfer from Manaus to the Fotel Piranha Eco Lodge or vice-versa is divided in the following parts:

Daily departures: 02:00pm (total transfer time is around 3 1/2 hours)

1) Manaus (AIRPORT OR HOTEL) - São Raimundo port: 1/2-hour trip by van or minibus

- 2) São Raimundo port to Cacau Pereira town by boat, around 30 min
 - 3) Cacau Pereira town to Manacapuru town by van over paved road , around 60 min
 - 4) Manacapuru town to the Fotel Piranha Lodge by boat, through channels and lakes , around 1 1/4 hr
- Return transfers to Manaus (AIRPORT OR HOTEL) with arrival at noon

Bird Watching

Bird watching is a unique experience here. It is not by chance that it occupies the first place in our "main attractions list". Those large wetlands, naturally preserved areas due to the difficulty of access in the low season, roughly November and December , are the ideal places for nesting to several dozen different migrating and local bird species.

As a consequence, we dedicate a great deal of time to bird observation with specialized naturalist English speaking guides, using our canoes in one/two hours excursions very early in the morning, 5:30 AM (sunrise is around 6:00 AM all year around) , and also very late in the afternoon 5:00 / 6:00 PM , when our winged friends are leaving or returning to their resting places.

A spectacular visual show, it is also a sort of modern cacophonous comic opera, since the number of branches on a designated tree and the space available, is not, most of the time, coincident with the volume of different species landing candidates , resulting in violently aggressive arguments , covering basically all tones in the sound scale (and this can go for a long time indeed ...) .

It goes without saying that binoculars are mandatory for this type of excursion and ear plugs are optional for those musically sensitive.

Environmental trekking

Recently, and this was not easy since we are basically in a 100.000 ha flooded area , we discovered a pristine rain forest highland area , near the Sacambu Lake (please see map) and not far from two small villages " Campinas" and "Castanho".

Therefore we can offer from now on, guided excursions that will leave our Flotel when it is at the mouth of the Piranha Channel with the Great Manacapuru Lake, its nearest point.

Our guides will take you , after a one and a half hours canoe ride , by foot trough the dense high land rain forest (see photos) which is totally different from the "varzea" flooded areas.

Here we find the giant brazil nut trees, the red woods, the dry land rubber trees, the medicinal plants , the water vines , the dark mysterious spots and the furtive animals that dwell on it , guessing its presence mostly by the noises, the tracks we find here and there , or the snack remains, proof of its recent presence , since in the jungle , nothing edible stays for long anywhere unless it's alive and in good physical condition.

Incidentally , we customize our walking tours according to the demand , the condition and the interest of our guests ; and since our Flotel is limited to 16 apartments , groups are never very large, which is always a plus regarding any nature observation tour , and of course , your total satisfaction is our main goal.

Tours to Flooded Areas

Since all around us everywhere is a flooded area, we do not have to go very far away from our Flotel to do these tours. However, none of these tours resemble in the least the first or the last you will participate during your stay.

Why is that so?!

Just because once you enter the Piranha Reserve , you enter a self sustainable biome and Water Planet , composed of a myriad of labyrinths , channels , lakes , short cuts , hidden ponds, islands , peninsulas , lagoons , a real paradigm of life in all its Amazonian forms and all its possible levels , underwater, slightly submerged , plainly floating, in and out , barely touching, suspended, hanging , hiding , in plain view , jumping around or slowly disappearing in the horizon...

Anyway, each of our tours is a learning experience even for us, since we just discovered a large cormorant crowd which is not sleeping on the same place anymore, or there is a new family of howler monkeys growling around, and yes, last week we finally could navigate the "caipira" lake or the "gaivota" channel which results in a 30 minute economy to get to the pink dolphins lagoon.

So, life is the same and every day is different at Piranha Lake Amazon Brazil! Please let us be your host in this magnificent and unique experience.

Fly Fishing - Catch & Release Fishing

Yes, we do fish for Piranhas at Piranha Lake, that is obvious and much too easy .

Actually the variety and quantity of fish available associated with the expertise of the local inhabitants, our guides, has led us not to put over emphasis in our fishing tours, unless it is the main interest of a particular private group .

So many secrets now disclosed, so simple after discovered, like for instance why there is such a huge quantity of fish available for the taking , always in the vicinity of the large groups of sleeping birds ...(and the reason, I let you guess...).

Night Tours

A lot of times wrongly called alligator spotting tour hardly reflects the experience of a night tour in the Amazon , and specifically in our Piranha Reserve area.

First, it is the night in itself, the raw beauty of the natural moon and star reflections without the artificial lights of civilization.

Secondly the sounds, a midnight serenade (no, we actually start sooner than that) of crickets, frogs, nocturnal monkeys , Caymans , birds ...what was that ?

And finally the observation in itself , since besides the omnipresent Cayman , available in all shapes (the piranhas sometimes slightly modify their tail end shapes) sizes (from baby dino to Godzilla) species (3 - melanosuchus niger - paleosuchus trigonatus and cayman crocodilus) and moods (from apparently catatonic to... Jaws - the movie - The Amazon Connection) , besides our reptilian friends , we will encounter night jars, giant potoos , dart frogs , sleeping birds, insomniac birds , birds that had no problem at all sleeping until we accidentally woke them up, etc, etc.

Visit to the Native Communities

Yes, our resident natives are called "caboclos" and they are the direct result of the genetic melting pot originated by the European colonization , the African slavery and the original Indians , accelerated on the last 150 years by the discover of the Hevea Braziliensis - rubber tree and the resulting boom , attracting thousands of immigrants from the dry lands of Northeast Brazil.

Living in floating houses they are fiercely proud of their knowledge of the rainforest (an Indian legacy) , of their knowledge in boat construction , (a Portuguese legacy) meanwhile the elders remember nostalgic stories of half a century ago , when the abundance of turtles and other animals was amazing (a legacy no one wants to take credit for) , but we sure want to contribute to reinstate this abundance , with our educational and preservation philosophies .

So, by visiting these communities, educating and hiring its members we are contributing decisively to the sustainable development of this area trough eco-tourism in which you, dear guest, is the main factor.

FLOTEL PIRANHA ECO LODGE

REGULAR PROGRAM 4 DAYS / 3 NIGHTS DAILY PROGRAMS AVAILABLE

1. Day Sunday

- 14.00 hrs depart from airport or you hotel in Manaus

Transfer time is around 4 hours in 4 stages:

- A) Manaus—São Raimundo port (van)
- B) São Raimundo Cacau Pirera port (speedboat)
- C) Cacau Pirera—Manacapuru (86 km paved road, van)
- D) Manacapuru—Lago do Piranha (speedboat)

- 18.00 hrs arrival at the Foltel Piranha Eco Lodge

Welcome drinks and reception

- 19.00 hrs Buffet style dinner
- Overnight

2. Day Monday

- 05:30 hrs Depart for early morning birdwatching by wooden canoe
- 06.30 hrs Brazilian Breakfast
- 07.30 hrs Morning excursion by wooden canoe
- 12.00 hrs Buffet style lunch
- Siesta
- 15.00 hrs Afternoon excursion by wooden canoe
- 18.30 hrs Byffet style dinner
- Overnight

3. Day Tuesday

- 06.30 hrs Brazilian Breakfast
- 07.30 hrs Morning excursion by wooden canoe
- 12.00 hrs Buffet style lunch
- Siesta
- 15.00 hrs Afternoon excursion by wooden canoe
- 18.30 hrs Buffet style dinner
- 19.30 hrs Caiman watching
- Overnight

4. Day Wednesday

- 06.30 hrs Brazilian Breakfast
- 07.30 hrs Departure to Manaus Hotels or Airport
- 4 hours transfer with 4 stages.
- Time to visit the Opera House for 15 minutes
- Estimated time of arrival: 12.00 hrs

Observation: The half day excursion in wooden canoes are: Wildlife Observation, Birdwatching, Rainforest Trek, Fishing, community visit, depending on weather conditions and clients disposition. Exception is made to the night excursion.

FLOTEL PIRANHA ECO LODGE

REGULAR PROGRAM 5 DAYS / 4 NIGHTS DAILY PROGRAMS AVAILABLE

1. Day Wednesday

- 14.00 hrs depart from airport or you hotel in Manaus

Transfer time is around 4 hours in 4 stages:

- A) Manaus—São Raimundo port (van)
- B) São Raimundo Cacau Pirera port (speedboat)
- C) Cacau Pirera—Manacapuru (86 km paved road, van)
- D) Manacapuru—Lago do Piranha (speedboat)
- 18.00 hrs arrival at the Foltel Piranha Eco Lodge Welcome drinks and reception
- 19.00 hrs Buffet style dinner

Overnight

2. Day Thursday

- 05.30 hrs Depart for early morning birdwatching by wooden canoe
- 06.30 hrs Brazilian Breakfast
- 07.30 hrs Morning excursion by wooden canoe
- 12.00 hrs Buffet style lunch
- Siesta
- 15.00 hrs Afternoon excursion by wooden canoe
- 18.30 hrs Buffet style dinner
- Overnight

3. Day Friday

- 06.30 hrs Brazilian Breakfast
- 07.30 hrs Morning excursion by wooden canoe
- 12.00 hrs Buffet style lunch
- Siesta
- 15.00 hrs Afternoon excursion by wooden canoe
- 18.30 hrs Buffet style dinner
- 19.30 hrs Caiman watching
- Overnight

4. Day Saturday

- 06.30 hrs Brazilian Breakfast
- 07.30 hrs Full day excursion to terra firme forest (Boat and walking)
- 12.00 hrs lunch box
- 18.30 hrs Buffet style dinner
- Overnight

5. Day Sunday

- 06.30 hrs Brazilian Breakfast
- 07.30 hrs Departure to Manaus Hotels or Airport
- 4 hours transfer with 4 stages.
- Time to visit the Opera House for 15 minutes
- Estimated time of arrival : 12.00hrs

The half day excursion in wooden canoes are: Wildlife Observation, Birdwatching, Rainforest Trek, Fishing, community visit, depending on weather conditions and clients disposition. Exception is made to the night excursion and the full day Terra Firma visit.

Amazon Rainforest

“...trees of a thousand kinds and tall, so that they seem to touch the sky. I am told they never lose their foliage, and this I can believe for I saw them as green and lovely as they are in Spain in May...” - Christopher Columbus

The Amazon Rainforest contains the largest area of tropical forest in the world. It covers 6 million square kilometers in 9 different countries (circa 60% in Brazil). At first look, the Amazon forest seems to be rather uniform in physiognomy but in fact there are many typological variations and ample species diversity. The forest canopy is frequently discontinuous, giving space for special ecological niches. At the heart of this region lies the huge Amazon River, the longest water course of the world. The Amazon holds more than 20% of the planet's fresh water, has at least 1,000 tributaries. The Rio Negro is its largest tributary. The Amazon Rainforest with Gateway Manaus actually includes four major vegetation type:

TERRA FIRME Forest (Upland forest) Located on higher grounds with no direct influence from rivers.
VÁRZEA Forest (Marshland forest) Seasonally flooded lowland forest.
IGAPÓ Forest (Flooded forest) Permanently flooded lowland forest.
CATINGA Forest (Along Rio Negro) River, called as well Campinarana.

Do you really think you know everything about the Amazon Forest? Let us be your introduction to one of the last undiscovered places on Earth. The Nature's Greatest Show. THE AMAZON FOREST!

Home of the world's largest rainforest, and a ceaseless source of myth, mystery and adventure.
A canopy of green spreads over a 2,030,000 square mile ecosystem that includes the Amazon River, Amazon Forest (the largest and densest rainforest in the world) and upwards of five million animal species.
Over 25,000 species of plants and more butterflies can be found here than anywhere else on the planet.
There are also 170 Indian cultural groups living in the Amazon, remnants of the 7 million who flourished there once, but who have been reduced to no more than 200,000 today.
The Amazon is an area of superlatives. Home to our planet's greatest diversity of plant and animal species:
The Amazon Basin is the planet's largest body of fresh water!
Besides the Amazon River, there are 1100 tributaries, 17 of which are more than 1000 miles long !
Now recognized as the world's greatest reserve of life form !
Holds the greatest biological accumulation of carbon on Earth !
Marajó Island, located near the river mouth, is the size of Switzerland !
Giant Victoria lilies, pink dolphins, poison arrow frogs, and much more is all to be found here !
Once an oceanic gulf, some 250 million years ago opening westward to the Pacific Ocean, the Amazon River today flows 1/5 of the world's fresh water into the Atlantic Ocean.
The Amazon is one of the largest remaining contiguous tracts of nature on earth. Here nature's finest show unfolds before our eyes!

Rainforest

Rainforests are living emeralds which adorn our world with rare beauty and natural wonders. They are a product of planetary processes and are - in turn - contributors to the water and carbon cycles on which all life depends. Tropical rainforests are the result of the unique climatic conditions found between the Tropics of Cancer and Capricorn, in the regions north and south of Earth's equator. Here, constant heat and humidity allow trees and plants to grow year round, without seasonal time-outs. Vast columns of hot air rise and condense out as rain, resulting in annual rainfall of 80 to 400 inches: annual temperatures average over 80 degrees Fahrenheit. And so the tropics are garlanded with trees, plants, animals and insects, uniquely adapted to these conditions.

The earliest written description of rainforests in Western literature seems to be that of Christopher Columbus, but the term "Regenwald" (rain forest) was first used by a German naturalist, A. F. W. Schimper, many centuries later, in 1898. Exploring rainforests had a profound impact on the thinking of some of the greatest of 19th century biologists and naturalists—Alexander von Humboldt, Alfred Russell Wallace and Charles Darwin. Darwin's and Wallace's experiences in rainforests shaped their theories of evolution through natural selection, which in turn inspired 20th century biology, leading to recent advances in molecular biology and genetic engineering.

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Buttress Soils of the typical lowland rainforest are often shallow. In much of Amazonia, there's only a few inches of soil above reddish clay. Many roots stretch out over the surface, rather than burrowing underground. Here many trees use wooden buttresses (like the buttresses which support the giant Gothic cathedrals of Europe), organic flanges which grow out from the base of the tree on all sides to balance it. Some biologists say this shape also allows the tree to gather nutrients from a greater surface area of soil since lots of small rootlets extend down from the bottom of the buttresses.

Still Roots In other places, so-called "prop" or "stilt" roots emerge like slanting rods from the main trunk 1 to 2 meters above the ground to help support the trunk. (The LFRF Guide provides a way to explore these engineering feats of Nature in Activity 1.2.). This particular kind of root is often found in flooded or mangrove forests, where it also protects the tree against waves and currents.

Drip tips Rainforest leaves also have distinctive features. Many have "drip tips"—a pointed shape which helps drain excess water from the leaf and reduces vulnerability to mold and predation. Researchers often speak of how different plants try to prevent "herbivory"—the eating away of vegetation by insects or other parasites—and minimizing moisture with drip tips is one such strategy. When it fails, leaves become a lacy net of holes and fibres.

Mutualistic relationships With the constant fight for light and water, nutrients and energy, many rainforest species come to rely on each other, and develop intimate and exclusive relationships. Some plants, for example, provide "ant houses," home to a particular species of ant whose soldiers defend the leaves against other would-be insect predators. Other plants provide leaves with tiny feeding troughs, pools of sugar-solution, enticing ant patrols with sweet rewards. (You can find more information on these "ant-defended plants" in the LFRF Teacher Resource video which is part of the Multimedia Kit.) In addition, however, to listing and marvelling at such distinctive aspects of rainforests, we should also try to comprehend the myriad relationships and interactions to be found in them. As Alexander von Humboldt wrote, "...more beautiful still than all the wonders individually is the impression conveyed by the whole... in its entirety." (For more on rainforest relationships, please explore "ECO system" online, and if you're a teacher or youth leader, consider implementing the Tropical Rainforest Food Web Game [Activity 2.3] which helps bring these intricate interactions to life.)".

Rainforests are defined—as you would expect—by rainfall, and in fact they are literally created by it. ("Rain forest"—two words—is the older usage: both are accepted, but most modern authors and researchers combine the two, as does PTK, as in "Rainforest.") They can be found where rain exceeds 80 inches per year, and can appear in temperate as well as tropical zones, so long as the rainfall is sufficiently plentiful.

Tropical rainforests often have from 160 to 400 inches of rain a year. But they aren't the wettest or even the hottest places on Earth. (The wettest is Mount Waialeale, in Hawaii, USA, and the hottest is Libya in North Africa.) But just as important as the amount of rain in shaping the unique character of rainforests is the constant humidity and high average temperature. In the Amazon basin you can expect at least 130 days of rain a year and, in many places, up to 250 days. The relative humidity never falls below 80%, and temperatures vary little between daytime averages of 31 degrees Centigrade (88 Fahrenheit) and night-time lows of 22 degrees C (72 F).

Sometimes this constancy of temperature and humidity leads people to argue that rainforests have no seasons, but in the tropics this is only partially correct. There may not be a cold winter and a hot summer, but there are DRY seasons and WET seasons. Plants and trees flower at these different times of year, profoundly influencing the lives of the creatures who inhabit them. And our contemporary understanding of rainforests (see ECO system) quickly dispels the misconception that this is a changeless Eden, where Nature's endless bounty means things are always the same. In fact there's a constant fight for light, water and nutrients, one of the reasons natural selection has had such a powerful effect in creating the great numbers of species which make tropical rainforests the richest places for biodiversity on Earth.

Emergent trees Rainforests have a distinctive structure. Above a sea of green, which is called the "upper canopy", tower just a few "emergent trees" per acre, sometimes as tall as 40 meters (over 130 feet.) In all the forest they alone enjoy unfettered access to the sun and sky. The ways in which they disperse their seeds—by wind—and the creatures who inhabit them—birds like the harpy eagle, and the toucan—are very different from those found below.

Canopy Most photosynthesis occurs in the canopy—that vast carpet of green which Alexander von Humboldt called a "forest above a forest"—which absorbs as much as 98% of the sunlight falling on the forest, darkening the lower regions. Here, 20-30 meters up (65-100 feet), live butterflies, and mammals like the three-toed sloth, moving slowly but efficiently in search of vegetation, descending only once a week to the ground to defecate. (See Ecosystem.) Temperatures here reach 32 degrees C (96 F) but the humidity is only 60% (compared to 98% down below.) Since this is where photosynthesis occurs, this is also where productivity is greatest: each year a tropical rainforest produces about 25-30 tonnes of new growth per acre (10-12 tons), twice as much as a temperate oak forest.

Under story In virgin rainforest, the under story is not the "jungle" of tangled vines seen in old movies, or observed from boats on one of the thousands of rivers and tributaries also nourished by the heavy rains. Undisturbed rainforest is surprisingly clear of vegetation close to the ground in part because so little light filters down through the canopy, sometimes only 1 to 2 per cent of the sun's original intensity. But even here life's struggles are intense, and insects, fungi and roots all fight for access to energy the raw materials of existence. Here temperatures are cooler, averaging about 28 degrees C (82 F) but humidity is higher, about 98%.

In addition to Brazil, Peru, Columbia and Venezuela have large regions of rainforest. Almost one third of Columbia is forested, as is much of southern Venezuela. The forested area of Guyana is largely untouched, since the population lives mainly on the coast, and in Suriname much of the nation is park or preserve.

The agouti, a relatively large, rabbit-sized rodent with a short tail and long legs, is mainly active during the day, but at times is also active at dusk and at night. It lives on the forest floor and sleeps in burrows. Many rodents destroy all the seeds that they gather and eat, but agoutis exhibit the behaviour of "scatter-hoarding"; they carry some seeds long distances and bury them without damage, just as squirrels in North America bury acorns. Fruits too heavy or awkward to be carried by bats or monkeys are often dispersed by animals like agoutis.

For example, people have wondered how the seeds of the Brazil nut tree are freed from the very hard woody fruit enclosing them. It is now known that Brazil nut fruits, after falling to the ground, are chiselled open by agoutis, which eat some of the seeds but scatter-hoard the rest. Agoutis generally fail to find all of the Brazil nut seeds they bury, and these are then free to germinate and grow into seedlings. Agoutis are eaten by predators of the forest floor like the jaguar, large snakes, and bush dogs. They can also be taken by birds of prey like the Harpy eagle.

Many different kinds of small frogs live in and around the pools provided by the central cup of tank bromeliads. These frogs mainly eat ants and other small insects that come to the bromeliad. They reproduce in the bromeliad, and their tadpoles develop in the water-filled pools, feeding off algae, mosquito larvae, or other small organisms in the water. Two kinds of bromeliad frogs are marsupial frogs and the colourful poison arrow frogs. Some marsupial

frogs carry their eggs and developing tadpoles under a skin flap on their back. When the female enters the water in the bromeliad pool, the tadpoles are released into the water and continue their development there.

Poison arrow frogs. Brightly-coloured and very poisonous poison arrow frogs (the source of the toxin Amazon Indians use to tip their poisoned blow darts) lay their eggs under wet leaves on the forest floor. The parents guard the eggs until they hatch, then carry the tadpoles on their backs, one at a time, high up into the canopy to a bromeliad pool. Only one tadpole is placed in each bromeliad pool, a behaviour that scatters the tadpoles and reduces competition for limited food in the small pool. Predatory damselfly larvae also developing in the bromeliad pools are major predators of bromeliad frog tadpoles. The adult frogs, with their poison-laced skin, are protected from most predators. About 200 different poisonous chemicals have been found so far in the skin of these small frogs.

Known as the "organ-grinder's" monkey, these monkeys prefer to live in the upper levels of the forest canopy. They are intelligent and agile, with a "wise-old man" facial expression created by a wrinkled forehead and a head of hair like a monk's hood. They are omnivores and eat a varied diet, consuming fruits, seeds, flowers and their nectar. Capuchins travel in noisy troops. A troop can range from 5 to over 30 monkeys who forage at various levels of the forest. They hunt in the treetops and swoop down to the shrub, eating nearly all animals they can catch: insects, snails, caterpillars, spiders and other small animals. They also capture larger prey such as small rodents, opossums, baby birds, lizards, and frogs. When capuchin monkeys lap up the nectar from flowers, the fur surrounding their hairy faces gets covered in yellow pollen. By carrying the pollen through the forest, they may assist in the pollination of some trees to a greater extent than scientists have previously realized.

Howlers can be found all over the U. C. neotropics. There are six species, two of which are considered endangered. Howlers are large monkeys with prehensile tails and bearded faces. Four colour ranges from bright reddish to brown to black. The names come from their most distinctive feature—a ferocious, loud, and according people who have been awakened from sleep by howlers, almost unearthly voice that echoes throughout the rainforest at sunrise and sunset. Male howlers have specialized throat structures that, like a megaphone, amplify their calls so they resonate for nearly a mile through the rainforest. Howlers mark their territory: through their calls, they are communicating the location of their "turf" to other troops, thus avoiding a face-to-face or troop-to-troop confrontation. Howlers have a social structure: males are dominant over females; troops generally consist of 3 adult males, 7-8 adult females and a varying number of juveniles. Their prehensile tails and strong claws are designed for gripping and leaping from branch to branch, so these leaf-eating, tree-dwelling "swingers" rarely have to come down to earth.

Although it is the largest cat in the Americas and the largest predator in the Amazon, the jaguar is increasingly uncommon and rarely seen. It can be found in many habitats, but prefers riverbanks, where it usually sleeps by day and hunts by dusk/night. The jaguar generally hunts forest floor animals, but can both climb and swim with ease. Its favourite hunting strategy is to lie in wait in branches and pounce on its victim. Jaguars are "searchers," preying on whatever creatures they come upon, unlike "pursuers" such as the cheetah, who chase down only a few select animals. The jaguar's major prey includes tapirs, deer, monkeys, and capybara, but it will eat almost any vertebrate. Occasionally, it is able to catch sloth's when they make one of their infrequent descents to the forest floor. The heavy jaws and large facial muscles of the jaguar give it one of the most powerful bites of any cat. The most water-loving of the cats, they can cross wide rivers and capture prey in the water. It can eat "tough" prey like caiman and turtles, crunching through the shell. Jaguars are "keystone" predators that help keep populations of prolific rodents like agoutis in balance. "Keystone" species are critically important to others in the community. Their removal causes dramatic changes for other species, altering the balance in the community. Jaguars have distinctive spots. In the rainforest, this serves as an advantage. The spotted pattern moving through the sun-flecked light and alternating shadow becomes less of an obvious physical outline, thereby disguising the jaguar as it stealthily moves across the forest floor. Jaguars are normally solitary. Still widely distributed in South America, but persecuted as predators by cattle ranchers, they have become extinct or endangered in many local areas.

Spider monkeys are the most acrobatic of the South American monkeys. They have a powerful, well-developed prehensile tail that can be used as a "hook" for hanging from branches, or as a "hand" for gathering and holding their favourite foods. They prefer to eat fruits, along with nuts, shoots, buds, new leaves and flowers. When eating fruits, a family of spider monkeys drops many to the ground, where they are eaten by agoutis, which destroy many of the seeds.

The monkeys, however, swallow the seeds along with the fruit, then carry them away and deposit them in their dung elsewhere in the forest. Thus, the monkeys are another species that aids the re-growth of the forest. Spider monkeys spend most of their time in the forest canopy. Although they are remote from ground water supplies, they have been observed drinking from the "water cups" of tank bromeliads.

Their high habitat protects them from most forest predators. They may be eaten by cats and large snakes like boa constrictors; young monkeys are also preyed upon by Harpy eagles. The major threat to their survival is deforestation, which has led to the fragmentation and isolation of populations.

This is a cat-sized anteater with short, coarse fur and a prehensile tail. It spends nearly all its time in trees. South American tamanduas usually have a uniformly honey coloured coat; those from Central America have bold, two-toned black and tan coats. Using its strong tail to grip the branch, the tamandua breaks into the hard-walled outer protection of ant or termite nests with its powerful fore-claws, and then catches ants and termites with its long sticky tongue, licking up thousands during a meal. Although termites and ants form the bulk of its diet, it will eat other insects (e.g. bees, beetles etc.) as well.

It does not eat all kinds of ants or termites! Army ants are too aggressive, and can sting. Leaf-cutter ants are spiny, and difficult to swallow in its long, toothless mouth. Such kinds of ants are usually avoided. Azteca ants are a favourite prey, but when thousands of ants start pouring from the nest and onto the anteater, biting with their tiny jaws, the anteater will usually retreat. Thus, the ant nest is rarely completely destroyed .

Toucans have large brightly-coloured beaks that are adapted for fruit-eating. Each species' beak is distinctively coloured, which seems to serve as a "flag" to allow toucans to find others of their species in the dense vegetation.

Toucans nest in holes high in trees. They are weak fliers and usually short-glide or hop among tree branches in the canopy layer, searching for fruits and berries. The seeds of some forest plants can only be successfully germinated after passing through the digestive tract of animals like the toucan. Other seeds can only be successfully scattered throughout the forest with the help of birds and mammals like toucans, macaws, monkeys, and the capybara.

Though mainly specialized fruit-eaters, toucans sometimes search in bromeliads and tree holes for frogs and lizards, snap at flying insects or grab baby birds out of tree holes and nests.

This beautiful snake lives almost entirely in the trees. It is well-camouflaged, with green skin striped with white or yellow. This protective coloration allows the snake to get near its prey without being seen, and also helps to conceal it from predators like the Harpy eagle.

The boa's common hunting strategy is to remain quiet and inconspicuous in the trees as it waits for potential victims to come close; it then strikes out and grabs or drops on the prey animal. Boas are non-poisonous constrictors that kill the prey by squeezing and suffocating. The boa's diet usually consists of small birds, but it also kills small rodents, such as mice or young agoutis, lizards, other snakes, etc.

The three-toed sloth is almost totally arboreal ("tree-dwelling"), with a body "built to hang." It lives in the shrub or lower tree layer, but sometimes moves to the canopy. Its long, coarse, grayish-brown fur often appears greenish, not due to pigment but to algae growing on it. The sloth's greenish color and its sluggish habits provide an effective camouflage: hanging quietly, the sloth resembles a bundle of leaves. Large curved claws help the sloth to keep a strong grip on tree branches. Considered by some to be a highly selective feeder, it was once thought to eat only leaves of the cecropia tree. Although cecropia leaves do make up the bulk of the sloth's diet, more recent studies have shown that it also eats the leaves of many other tree species. The three-toed sloth spends nearly its entire life sleeping, feeding and moving around in trees, only descending to the base of the trunk every week or two to deposit dung pellets. It expends a lot of energy in this effort, descending from the tree, poking a hole with its stubby tail and then carefully burying its dung pellets. This "toilet" schedule helps this tree-dweller to conserve water, which, ironically, is not easy to get up in the trees.

The sloth sleeps soundly upside down for about 18 hours each day. It is protected by its high habitat and hanging posture from most predators. However, it is vulnerable to attacks by the Harpy eagle, especially when it basks in the sun at the end of branches. Though rarely seen, the sloth is probably one of the most common large animals in the New World tropics; however, populations are declining due to destruction of forest habitat.

Many different kinds of antbirds exist. They are usually full-coloured birds that feed on insects such as ants and termites. The most famous antbirds are those that are associated with army ants. When the ants set out on a "raid", the birds follow them as they move. The birds stay near the front lines of the advancing ant army, and capture insects, spiders, scorpions, etc. that are trying to escape from the ants. Antbirds don't usually eat the army ants themselves, but they do seize and steal animals already caught by the ants, in addition to those trying to escape or outrun them.

Antbirds also sometimes move through the forest in a large mixed-species flock that may contain as many as ten different species of antbirds and many other kinds of forest birds (e.g. tanagers, antshrikes, and antwrens) in a kind of cooperative hunting party. These large groups of birds flying through the forest at several different levels like a "bird wave" scare up many different insects. Antbirds are a specialized species, and are one of the first to disappear when the forest is damaged or disturbed.

Many different kinds of fruit bats live in the Amazon. Some prefer to live only in the upper canopy. As their name implies, fruit bats feed on flowers and fruits. They have large eyes and sensitive noses and use both sight and smell to locate fruit. Fruit bats have small, weak teeth and long, bristly tongues. As the bat probes the flower for nectar, it collects pollen on its furry head and neck. It then carries the pollen to other flowers.

Many tropical trees rely on bats for successful pollination of their flowers. Whereas trees pollinated by birds often produce red flowers to attract the birds, those that rely on bat-pollinators produce large amounts of nectar and pollen and often tend to have flowers that are drab, bloom at night, or have a fetid smell. Fruit bats eat the fruit of cecropia and other trees and are essential seed dispersers. The seeds pass through their digestive tracts and are thus widely scattered throughout the forest.

Scientists have observed that most bats spend only a few seconds or so at each nectar and pollen-rich clump of flowers. This may be because tree snakes (like the emerald tree boa) or other nocturnal predators often wait in hiding near blooming flower clusters.

The largest and most ferocious of the world's eagles, the Harpy is a bird that is rare and infrequently seen. It is the top predator in the jungle canopy, and hunts by day. It is a heavy bird in flight, with a powerful bill and talons. Its wings are rounded, strong and relatively short, and its tail is long: a body shape that makes it agile and highly maneuverable in flight, and enables it to chase monkeys through the canopy branches at high speeds. Its mottled gray plumage provides good camouflage. Hunting mainly in the canopy, it can swoop down through the tree crowns and with outstretched giant talons capture fleeing monkeys, or snatch sleeping sloths.

Harpy eagles nest in the tallest emergent trees, often silk cotton trees; the nest is a large platform of twigs that is used from year to year. Normally, two eggs are laid, but only one chick is successfully reared to adulthood, in about 6 months. One pair of harpy eagles that were carefully studied by scientists was found to prey mainly on two animals: sloths and capuchin monkeys. Other animals caught and eaten included opossums, agouti, small deer, tree porcupines, kinkajous, howler monkeys, snakes, ant-eaters like the tamandua, and large parrots.

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