



TROPICAL RAIN FOREST

SELF-GUIDED TOUR FOR TEACHERS AND CHAPERONES

This guide provides questions and suggested answers to help teachers and chaperones guide their students through Woodland Park Zoo's Tropical Rain Forest bioclimatic zone. The text includes questions (in *italics*) to share with students. Some of these questions have no right or wrong answer, but allow students to express a variety of responses, including sensory impressions as well as factual knowledge and observations. Chaperones should encourage students to think, to feel, and to observe as they progress through the exhibit from the forest floor to the canopy and the outdoor exhibits.

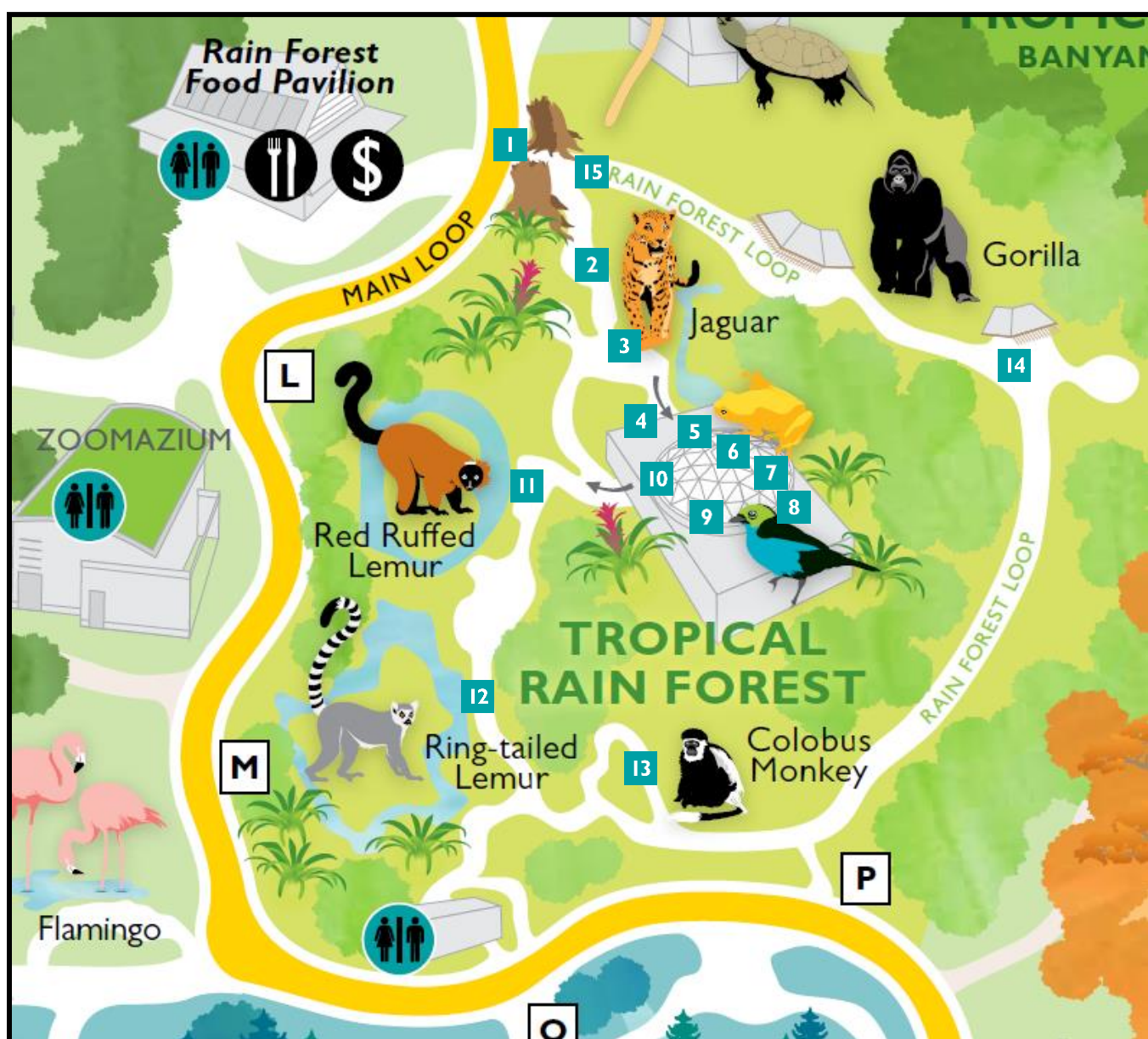


EXHIBIT OVERVIEW

The Tropical Rain Forest bioclimatic zone at Woodland Park Zoo reflects the complexity and diversity of a tropical rain forest through mixed species exhibits. The first part of the exhibit, beginning with Jaguar Cove and continuing through the building, focuses on animals found in the Americas, and is divided into layers—forest floor, understory and canopy. The emergent layer is represented by the fallen kapok tree at the entrance to the exhibit area. This layering is representative of a tropical rain forest. When you leave the building, you will be discovering tropical rain forest animals of Africa.

1. KAPOK (CEIBA) SPIRE

As you approach the Tropical Rain Forest exhibit, you will walk through the hollow trunk of a kapok tree, called ceiba in Central and South America. *What do you think happened to this tree? Why did it fall?*

This model of a kapok tree was designed to look like it was hit by lightning, which knocked the tree over and charred the inside of the stump. Look around at the inside of the trunk. *Why would a plant grow here?* There is sheltered space inside the hollow trunk, and the small animals that live here drop seeds, and also provide fertilizer.

2. TRACKS

Look near your feet. *Do you see animal tracks? Follow the tracks. Can you figure out what made them? What story do the tracks tell?*

If you look carefully, you will find that the jaguar scratched the wide buttress roots of the kapok tree (on the left side as you face the tree), and then went across the path to the cave. The jaguar rested for a while near the cave, and saw two peccaries (wild pigs) walking into some vegetation nearby. The cat bounded after the peccaries. *How many peccaries came out? Where did the jaguar go next?*



3. JAGUAR COVE

Why is there a big pool in the jaguar exhibit? Most cats don't like to get wet.

Jaguars, however, typically live near water and may wade or even swim to catch turtles and fish. Not many cats have jaws strong enough to break a turtle's shell, but jaguars do!

4. ENTRY ROOM

Now that you have entered the building you may feel more like you are in the tropical rain forest. *How does it feel?* The weather in the tropical rain forest is almost always warm and damp—temperatures range between 70 and 80 degrees Fahrenheit (21 to 27 degrees Celsius) and humidity averages 85%. *Look around, can you find some plants that provide us with food?* You may see bananas, coffee, vanilla and chocolate which all come from the tropical rain forest, along with many, many others. Look at the plant on the left side of the path with the very long, large leaves. That is a banana plant. You might also be able to find a coffee plant – these tall shrubs have small, bare trunks with lots of dark green, oval leaves that have prominent veins and wavy edges.

5. FOREST FLOOR

As you go through the doors, you are entering the forest floor. *What is it like here? Is it sunny and bright?* No, it is shady—the tall trees block the sun. Only about 1% of the sunlight actually reaches the forest floor. *Can you find an animal that is well camouflaged?* The ocelot has spotted fur to help it to blend into the dappled light on the forest floor. There are many other animals in this area that are also camouflaged!

6. POISON DART FROGS

As you stand by the poison dart frogs, look at the floor under your feet. *Are you still on the forest floor?* As you leave the carpet for the boardwalk, you are moving from the forest floor to the understory. The poison dart frogs use both layers of the forest. They lay their eggs in water on the forest floor. When they hatch, the adults carry their tadpoles up to a pool of water held by a bromeliad in the understory. Bromeliad—that's a word you might want to look up when you get back to school!



7. EMERALD TREE BOAS AND TIGER RAT SNAKE



Observe these two different snakes. *How are they the same? How are they different?* Because they are both snakes, there are many similarities in the structure of their bodies and in their diets (both eat other reptiles, small mammals and birds). Both snakes do not rely on venom, but use constriction (squeezing) to kill their prey. Their coloration is very different, but other than that, you would need to observe them for a long time to discover the differences between these two snakes. Emerald tree boas are nocturnal, meaning they are active primarily at night, and “hunt” for food by blending

into the environment and waiting for an unwary animal to approach, using heat-sensing pits near their mouths to sense their prey. Tiger rat snakes are diurnal (active during the day) and use their speed and agility to hunt for food. They have excellent eyesight to find and track their prey.

8. GOLDEN LION TAMARINS AND WHITE-FACED SAKI MONKEYS

You might have to look up to see these monkeys! *How do you think the golden lion tamarins got their name?* Golden lion tamarins spend most of their time high up in the trees where it is bright and sunny, and have bright golden colored fur. The fur around their neck is longer and thicker, like a lion's mane. When they have babies, the father carries them on his shoulders, and that longer mane of fur hides them from predators. *Do the white-faced saki monkeys look the same as each other, or different?* In these monkeys, only the males have white fur on their faces, so if you can see both monkeys you should be able to tell which one is the male and which is the female. These monkeys inhabit the understory and lower canopy of the rain forest, and spend all of their time in trees and are very skilled at leaping between tree branches.



9. KEEL-BILLED TOUCAN

What do you notice about these birds? Why do you think they have such long, large bills? That long bill helps the bird to reach hard to get fruit. The bill's honeycombed interior structure makes it not only very lightweight but also very strong for biting into fruit and for opening seeds and nuts.

10. CANOPY

As you pass through the glass door, you are entering the canopy layer of the forest. *How is the canopy different than the forest floor? How is it the same? Is it as damp?* It is much brighter and not as humid. While it may rain daily in the canopy of a tropical rain forest, the wind and sun evaporate moisture quickly at the tree top level.

What is the main color you see? The primary color in the canopy is green because of all the leaves. You may see some flashes of color as birds fly by, or from a flower that is blooming, but the foliage is so dense up here that it is hard to see anything but leaves. *Do you hear anything? Describe what you hear to a friend or your chaperone or teacher.*

Now, you can exit the canopy and the building to enter the tropical rain forests of Africa!

11. RED-RUFFED LEMURS

Why do you think the lemurs have such long tails? Can you see what their hands look like? Lemurs spend much of their time up in the trees, and use their long tails and grasping hands for balance as they move along branches or jump to another tree.



12. RING-TAILED LEMURS

What similarities and differences do you notice between the ring-tailed lemurs and the red-ruffed lemurs?

One similarity is they both have long tails. As mentioned for the red ruffed lemurs, ring-tailed lemurs also use their tails for balance, but they use their tails for another important purpose too – communication! *How could tails help with communication among lemurs?* Lemurs, with their long dog-like noses, rely a lot on scents to communicate with one another (some researchers even call this “scent language” because lemurs can say so much with smell! Ring-tailed lemurs will sometimes rub scent from their wrist glands onto their tails and then flick their tails around to spread the scent towards other lemurs (sometimes this turns into a lemur “stink fight”!)

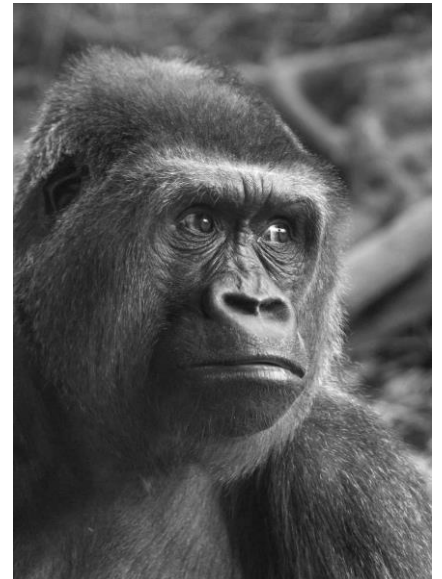
13. COLOBUS MONKEYS

Do these monkeys use their tails the same way that the lemurs do? Yes, they do. Both use their tails for balance and the colobus monkeys also use their tails to communicate with other members of their troop, but in a different way than lemurs. *Remember how hard it was to see anything but leaves in the canopy?* That long white hair on their tails makes it easy for the colobus monkeys to follow each other through those dense trees.

You will now leave the African rain forest canopy and move into other layers of the African rain forest.

14. GORILLA

In which layer of the forest are you most likely to find gorillas? Adult gorillas spend most of their time on the forest floor due to their large size. Young and lightweight gorillas may climb trees, but adult silverback males may weigh over 400 pounds, and do not generally climb trees. Gorillas are apes, not monkeys. Apes, unlike monkeys, don't have tails.



15. KAPOK (CEIBA) SPIRE

As you walk from the gorillas of Africa back to the jaguars of South America, you will find yourself back at the kapok tree spire. *What makes this tree the link between South American and African rain forests?* Kapok trees are one of the few species of trees found on both continents. Each seed is coated with very lightweight fibers, which some people use as stuffing for lifejackets. Scientists theorize that the seeds may have floated from South America to Africa on ocean currents using this lightweight fiber as a floatation device.

That concludes the Tropical Rain Forest tour. We hope you enjoyed the zoo and take time to explore the other bioclimatic zones.

Additional background information on this bioclimatic zone is provided in Woodland Park Zoo's Tropical Rain Forest Teacher Packet, available on the zoo's Web site at www.zoo.org.