

# **TROPICAL ASIA: TRAIL OF VINES** 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 award-winning Trail of Vines in the Tropical Asia bioclimatic zone. The text includes questions (in italics) to share with students. Many of these questions have no right or wrong answer; instead they allow students to express a variety of responses, including sensory impressions and observations. Chaperones should encourage students to think, to feel and to observe as they progress through the exhibit.



# **EXHIBIT OVERVIEW**

The Trail of Vines exhibit is one component of Woodland Park Zoo's Tropical Asia bioclimatic zone (along with the Banyan Wilds exhibit). The dense tropical forests of Asia hold some of the world's most endangered species including orangutans, Malayan tapirs and more. The Trail of Vines symbolizes the importance of aerial pathways in the canopy of the tropical forest. The vines provide a means for lateral and horizontal movement within the tropical forest. They are in effect the "super highways" and lifelines of the canopy. Most of the organisms living in the canopy rely on the vines and creepers that extend from tree to tree or from the treetops down to the ground, as a means of getting from one place to another. Siamangs, for example, rely on the network of vines to cover many square kilometers every day in search of food. When a gap occurs in the forest canopy due to natural events or human intervention, many organisms in the canopy become isolated. The vines symbolize the "web of life," the intricate system of links that exist between all living organisms. When a vine is cut, the connection between trees is severed and animals are isolated from food, refuge and family members. Similarly, when species become extinct or their numbers are severely reduced, their bond with the ecosystem is broken, thereby affecting genetic diversity, predator/prey relationships and the entire "web of life." The future of such species as François' langurs, siamangs and orangutans cannot be imagined apart from the forests that provide pathways and lifelines along vines and tree branches.

#### **1. TRAIL OF VINES ENTRANCE**

The tour begins at the pathway leading from the zoo's main loop path into the Trail of Vines, entering near the tapir exhibit.

Stop at the entrance of this pathway and look around—how many different types of plants can you count? As you enter the Trail of Vines, look carefully around the pathways. Notice how dense the vegetation is and how you can seldom see great distances in any direction. While wandering through tropical rain forests, you can never see very far in any direction due to the mass of vegetation. You are roaming through dense vegetation similar to that of a tropical forest. This exhibit is filled with more than 12,000 plants and the largest public collection of bamboo in the Pacific Northwest. The diversity of plant species, even within a small area of tropical forest, is amazing, and the plant diversity in this exhibit area is representative of the diversity of tropical rain forests. These plants only simulate those from tropical regions, but are actually plants from temperate regions and can therefore withstand Washington's weather.

*Can you find some very tall bamboo nearby?* Bamboo is an extremely important tropical Asian plant. The leaves of this fast-growing grass (some bamboo can grow up to four feet in 24 hours!) are eaten by many animals, including elephants, siamangs and red pandas, and stands of bamboo provide habitats and hiding places for many animals. Bamboo is also extensively used by people for fences, walls, pilings, furniture, roofing and basketry.





# 2. VISAYAN WARTY PIGS

If you choose, you can follow a pathway leading down to your right, through Thai Village, to visit the zoo's Visayan warty pigs!

Compare and contrast the Visayan warty pigs to other pigs you are familiar with – how are they similar? How are they different? Visayan warty pigs share characteristics typical of many pig species. They possess medium-sized, barrel-shaped bodies and short legs. They have short necks, longish heads, small eyes, prominent snouts ending in a disk-like nose, and tusks which are upturned lower canines.

But Visayan warty pigs also possess some distinctive features! Despite its common name, the Visayan warty pig has only small facial warts. The three pairs of fleshy warts are present only in males. Sparse bristles cover their bodies, dark gray or black in females and young males, and silvery or light-brown in adult males. Both males and females sport a tuft of dark reddish-brown or black hairs on the crowns of their heads. For mating season, Visayan males acquire an impressive new hairdo. The already spiky head tuft grows into a long mane up to 9 inches long. When threatened, boars raise their manes and thus appear larger and more imposing.

Wild pigs live in social groups called sounders. A single adult male with sows and their offspring comprise a typical group of Visayans. Family groups commonly number between three to six members, but may be over one dozen. Males may live solitary lives or in bachelor groups. Wild pigs live highly social lives. They usually forage in family groups accompanied by incessant communication in squeaks, chirrups and grunts.

#### 3. TAPIRS

What other animals do tapirs remind you of? This animal looks a lot like a pig but it is actually more closely related to horses and rhinoceroses. Its long snout (nose and mouth) help it to search out and grab its food. The thick skin of the tapir protects the tapir from insects, scratches and sun. The Malayan tapir is the symbol for the Malaysian Nature Society, an organization that protects animals and habitats in Malaysia. How could the tapir's black-and-white coloration help to protect it in the forest? The front half of the tapir's body and hind legs is black, and the rear half above the legs is white. This pattern obscures its outline, helping the tapir to become practically invisible in its shady forest environment. Lying down in the day, it resembles a large rock. While foraging at night, the tapir blends in with shadows and moonlight, making it difficult for nocturnal predators to detect its presence.

#### 4. FRANÇOIS' LANGURS

Watch the behavior of the François' [pronounced "frahn-swahz"] langurs. What types of activities can you observe? Are the langurs in the trees and branches or on the ground? You might observe some of the langurs' common behaviors of eating, grooming, resting or traveling through the trees. These langurs (also called leaf monkeys) primarily eat leaves, but will also eat fruits, seeds and other parts of plants. François' langurs are primarily arboreal (spend most of their time up in trees), however the forests they live in have many limestone cliffs and caves and the langurs will seek out these caves to sleep in at night, especially if it is raining. How can they be comfortable sitting on a tree branch most of the day? Have you ever spent much time in a tree? Was it comfortable? Probably not. You may notice toughened skin patches on the rumps of the langurs-these are called ischial callosities ("ish-sheeul kah-loss-it-eez"). These toughened patches allow the langurs to sit on tree branches for long periods of time.

#### 5. SIAMANG VIEWING AREA

Listen—have you heard the siamangs vocalizing today? Can you see the siamangs? What do you notice when they are vocalizing? Siamangs, which live in the forest canopy of Malaysia, are one of the most vocal primates. They have large, inflatable throat sacs that they use to emit barks, chatters and screams, as well as lowpitched resonating booms which can be heard throughout the zoo. As you walk through the Trail of Vines, stop and listen for the calls of the siamangs. If you can observe the siamangs vocalizing, watch how their throat sacs expand and contract to make the sound. The siamangs vocalize as a part of pair bonding; they may also use these sounds to warn each other





about nearby enemies or locate members of their family group. *Can you see how the siamangs move through the trees and vines?* Siamangs use brachiation (hand-over-hand locomotion) as their primary means of travel through their forest habitat. Siamangs' arms are much longer than their legs. These very powerful arms and limited body weight enable siamangs to swing on branches and vines with great agility. Siamangs hook, rather than grasp, branches with their hands. *Can you see the siamangs' hands?* Siamangs have elongated fingers to help them hook their hands over branches and swing from one to the next. Siamangs have opposable thumbs on both their hands and feet, so they can grasp and carry things with both their hands and feet.

#### 6. TREE TRUNK

Just past the siamangs' indoor exhibit note the large tree trunks on your left hand side which become wider toward the base. This feature is called the flaring buttress. *Why do you think trees in tropical regions have large buttresses?* The broad base of the tree's trunk is an important feature of tropical trees because it helps support the weight of the tree. Many rain forest trees are well over 200 feet tall. In temperate regions the roots of tall trees burrow deep in the soil to help hold the trees in place and gather nutrients. In the tropical rain forest, however, all the soil nutrients are in the upper layers of the soil so the roots of the trees are shallow. Shallow roots are easier to rip up in a big storm. Therefore, in order to help keep the tree standing, many tropical rain forest trees have very long roots and large buttresses.

#### 7. INDIAN PYTHON

Look at the pythons. *How do you think they move through the forest?* Adult pythons spend most of their time moving along or lying in wait for prey on the forest floor. The patterns and coloration of the pythons' skins help them to camouflage well with the leaves and dirt of the forest floor. Adult pythons do sometimes climb trees or even swim through water to move through the forest. Young pythons spend more time up in trees where they are safer from predators. Indian pythons are primarily nocturnal, meaning they hunt mostly at night. They are generally sluggish and seldom aggressive, except when they are incubating their eggs or shedding their skin. Pythons are often captured for the live animal pet trade because people think they would be neat pets. Many people get snakes as pets and then become bored with them or want to get rid of them when the snakes get too big. *What do you do with an exotic pet when you no longer want it?* Most people think the zoo will take it. Too many people want to give us their exotic pets, but we cannot take any of them.

# 8. ORANGUTAN RESEARCH STATION

When you look into this exhibit, does anything look out of place? The platform may look out of place in a forest exhibit but it is not. Woodland Park Zoo pays tribute to a few of the many people who are working to protect habitats and lives of endangered species. This tribute is in the form of a simulated orangutan rehabilitation station modeled after the Sepilok Orangutan Rehabilitation Centre in Borneo. Orangutans are endangered due to the loss of their habitat. They are also in trouble because, like the pythons you were just observing, people sometimes think they would be great animals to have as pets. Therefore orangutans are sometimes illegally taken out of the wild. The feeding platform in the exhibit is similar to ones used to reintroduce to the wild orangutans that have been confiscated from illegal pet owners. The orangutans are offered support from humans in the form of food left on a platform in the forest. The food is usually a bland diet, which encourages the orangutans to look for food. As the orangutans become more familiar with the forest surroundings, they forage more on their own until eventually they are no longer dependent on human assistance. If you can see the orangutans, what do you notice about their body size,



body shape and their hands and feet? Rarely descending from trees, orangutans have nearly identical hook-

shaped hands and feet that are well adapted for grasping and hanging from tree limbs. Young orangutans easily swing from limb to limb. Older, heavier adults must slowly move through the forest, using their hands and feet to test each branch to see if it will hold their weight. However, when required, an adult orangutan can move very fast. An adult male orangutan's arm span can reach 7 feet (2.13 m) or more.

# 9. BAMBOO STRUCTURES

Feel and examine the bamboo wall near the orangutan exhibit. Gently knock on the bamboo. *What do you notice?* Bamboo is hollow. The tall, rigid stem of bamboo growth in the dense thickets gives animals a place to hide. When bamboo shoots emerge, they are as big around as they are going to get. Therefore all growth is vertical. Bamboo is a member of the grass family. Its great strength makes it an excellent material for construction. Woodland Park Zoo has the largest public collection of bamboo in the Pacific Northwest.

# **10. ORANGUTAN FOREST**

*If the orangutans are not in the outdoor exhibit, is there anything to observe here?* Sure there is! Use all of your senses to observe the orangutans' environment. Look at all the things that make up the orangutans' environment. Touch the rock formation and the bamboo structures. Listen to the waterfalls. Smell the forest.

# 11. THE END

Think back on all that you have seen as you traveled through the Trail of Vines. What do you remember best? What will you share with your family or friends after you leave the zoo? How can you help save tropical habitats of Asia? By learning more about the forests and wildlife of tropical Asia and sharing what you learned with others, you can help people appreciate and take action for these amazing habitats and animals. The choices you make about the resources you use, such as the products you purchase, can help make the world a more sustainable place for wildlife and for ourselves. Learn more by looking for information in zoo exhibits and on the Conservation section of the zoo's website at <a href="https://www.zoo.org/conservation">www.zoo.org/conservation</a>.

Additional background information on the exhibit and biome is available in Woodland Park Zoo's Tropical Asia Teacher Packet, available on the zoo's website at <u>www.zoo.org</u> or call 206.548.2500.