

# Ways Into Science – Habitats

## Stop and chat sheet

The film is just about one habitat, the rainforest. This has been selected as it is a popular topic in schools and provides a contrast and extension to the woodland habitat which is a major feature of the Habitats book.

## How to use this sheet

Start the film and stop it at the places indicated to chat about the content.

Perhaps you may like to use the words in **bold** to help you choose extra topics to chat about.

## South American rainforest

### 0:29 minutes – The equator

You may like to point out that the **planet** is divided into **two hemispheres**. To the north of the **equator** is the **Northern Hemisphere** and to the south is the **Southern Hemisphere**. Show the children where they are on the planet and ask them which hemisphere they live on. Habitats vary according to the amount of **light, heat and water** they receive. Rainforests receive a great deal of all three, all year round so the plants grow very well there. You could discuss the amount of light, heat and water the habitats around you receive and describe the appearance of the habitat. You could compare this with the rainforest pictures that follow.

### 0:51 minutes – Insects and trees

**Insects** are making the sounds that can be heard. Many sounds are made by the insects scraping one part of their body on another, such as a leg on the edge of a wing. If you have a guiro and scraper you can move the scraper across the ridges to produce a similar sound.

Peter is standing in the **undergrowth layer**. These are plants which reach up to five metres high, behind him are trees which form the **understorey layer**. They reach up to 20 metres high. The trunk of the big tree to his left could reach up to 30 metres where its branches form the **rainforest canopy** layers. There are even taller trees that stick out through the canopy. They form the **emergent layer**. The children could measure out these distances on the ground then imagine them being trees and sticking up in the air.

## 0:58 minutes - Epiphytes

An **epiphyte** is a plant, which grows on another plant. It does not have roots that grow into the soil. Houseplants called air plants are epiphytes. If you have one of these, this is a good place to stop and chat about it.

## 1.01 minutes - Bromeliads

A **bromeliad** is an **epiphyte** that grows on branches. It has thick leaves that overlap and make a cavity that can hold water. This forms the pond in which **tree frogs** breed. Bromeliads are also cultivated and sold as houseplants. If you have one this is good place to stop and chat about it.

## 1:14 minutes – Tree frogs

Most **tree frogs** live in trees but some breed in water on the ground. The frogs have got **suckers** on the ends of their toes to help them grip as they climb and rest in the trees. Most tree frogs are found in the South American rainforest and in the last rainforest on the journey in South East Asia and Australia (at stop 3.22).

Tree frogs have long hind limbs to help them leap about in the branches. Many are brightly coloured to warn **predators** not to eat them and some are also **poisonous**. You may like the children to draw and colour in a frog with bright colours to deter a predator and see which one looks the most inedible!

Tree frogs eat a wide range of insects including ants and beetles. They may leap into the air to catch flying insects such as moths and use the webs on their hind feet like parachutes to slow them down while they find a branch to land on.

## 1:19 minutes – Howler monkeys

**Howler monkeys** are **herbivores**. They feed mainly on leaves but also eat fruit, nuts and flowers. The monkeys howl to show others that they have a territory they are prepared to defend and they also howl to attract a mate.

The tail of the monkey is **prehensile** – it can be curled round branches and used for gripping. The tip of its tail is sensitive to touch like our hands and can be used for feeling surfaces such as branches and fruit.

The howler monkey has a bone in its throat which has expanded to form a cavity. When the monkey makes a sound with its vocal cords it causes the cavity to resonate and make the sound louder. This makes the sound louder. You can demonstrate a resonator by blowing across a large empty plastic bottle. The **harpy eagle** preys on howler monkeys so you could produce a **food chain** :

Plant leaf -> howler monkey -> harpy eagle

## 1:22 - Macaws

**Macaws** are **parrots** that live South America. They are herbivores and eat fruit, nuts, seeds, flowers and leaves. They live in large family groups for protection. They are also brightly coloured to warn predators that they will fight if attacked and they make loud shrieks to scare predators away and warn other macaws that a predator, such as a snake, eagle or falcon is present. The birds of prey attack the macaws when they are flying.

## 1:36 minutes - Peccary

**Peccaries** are pig like animals. They eat roots, bulbs, fruits and seeds (if you have Plants in this series you may like to look at these plant features in the book) and also insects and worms. (If you have What animal is it? in this series on page 9 the term **omnivores** is introduced as a word used to describe an animal that feeds on both plants and animals). Two predators of the peccaries are jaguars and boa constrictors (a snake). Two food chains that could be made are:-

1. Fruit -> peccary -> jaguar

and as grubs are the larval stage of some beetles which feed on roots and are eaten by peccaries you could also have:-

2. Root -> grub -> peccary -> boa constrictor

## 1:40 minutes - Jaguar

The jaguar is a big **cat** – only the lion and tiger are larger. It is a **carnivore** and feeds on a wide range of animals including peccaries, deer, turtles, caiman (an animal like a crocodile) and monkeys and small animals such as mice and frogs.

## African rainforest

### 1:54 minutes - Trees

This picture shows a thicker **undergrowth layer** than the previous picture and the stump of a tree that might have been in the **understory**. The larger log on the right might have come from a tree that formed the **canopy**.

### 1:59 minutes - Crowned eagles

The **crowned eagle** is a **carnivore** and mainly eats **monkeys**. Three monkeys which make up its diet are the **Diana monkey**, **Blue monkey** and **Vervet monkey**. You may like to use the internet to find out more about their diet and construct food chains.

### 2:02 minutes - Grey parrots

Grey parrots feed mainly on seeds, fruits and nuts. **Birds of prey** such as **falcons** and **hawks** are predators of adult birds but monkeys will raid parrot's nests and steal

their eggs. When a predator comes close to a flock of parrots in the tree tops, the parrots become silent and then flap out into the air making loud shrieks which scare the predator away.

### **2:08 minutes - Chimpanzees**

**Chimpanzees** eat leaves, seeds, flowers and even **bark** (You can read about bark on page 13 of All about Plants in this series). They also eat honey and occasionally eat monkeys and **warthogs**. This makes them **omnivores**. The leopard is the main predator of the chimpanzee.

### **2:15 minutes - The bongo**

The **bongo** is a type of **antelope** that lives in the African rainforest. It browses on leaves of bushes in the undergrowth and grazes on grasses on the forest floor. The leopard is a predator of the bongo.

### **2:19 minutes - The Leopard**

The **leopard** is also a big cat although it is smaller than a jaguar. There are four big cats – they are in order of size starting with the largest – **tiger, lion, jaguar** and **leopard**. These four big cats are the only cats that can **roar**. The leopard feeds on a very wide range of animals including beetles, birds, monkeys and antelopes such as the bongo.

## **Rainforest of South East Asia**

### **2:32 minutes - Trees**

The picture of the rainforest here shows dense undergrowth close to the **forest floor** and thin **trunks** of trees forming the understory. The trunk on the left might belong to a tree that will grow into the forest canopy.

### **2:36 minutes - Great hornbills**

**Great hornbills** move around the rainforest in small **flocks**. Sometimes the flocks may join up to form a larger group around trees such as fig trees which have a large crop of fruit. A great hornbill will also eat any small animals it finds in the trees such as insects, snakes and lizards. The predator of the hornbill is the crowned eagle.

### **2:53 minutes - Pitcher plants**

The bottle part of the **pitcher plant** is made from a **leaf**. Inside the pitcher is a slippery surface. When animals, such as insect land on it they slide into the liquid at the bottom of the 'bottle'. This liquid kills and digest them. The parts of the digested animal are used to help the plant grow. This plant belongs to a group of plants called **carnivorous plants**. The **Venus fly trap** is also a carnivorous plant and is sometimes kept as a houseplant.

### 2:58 minutes - The Gibbon

The **gibbon** does not have a **tail** and is an **ape** like the **chimpanzee** and **gorilla**. It has long arms to help it swing through the trees. Gibbons eat mainly fruit but also eat other plant parts such as flowers, leaves and twigs. They sometimes raid bird's nests and eat eggs. When gibbons live high in the canopy, they do not have any predator but if they come down to lower branches they may be attacked by leopards and pythons.

### 3:02 minutes - The Orangutan

The **orangutan** does not have a **tail** and is an **ape** like the **gibbon** but is much larger. Each animal tends to live on its own rather than in a group like the other apes. It feeds mainly on fruit but also eats leaves and bark and the insects it finds on plants. When an orangutan wishes to rest it builds a nest by joining branches together and pulling leaves around it. The predators of the orangutan are the tiger and python.

### 3:08 minutes - King Cobra

A **king cobra** can grow up to four metres long. It feeds on other snakes such as the **rat snake** and small cobras and **pythons**. The predator of the king cobra is the **mongoose**. When the mongoose approaches, the cobra will try and slide away but if it cannot do this it raises up, spreads out a hood around its head to make it look larger and hisses to scare the mongoose away.

## Rainforest of New Guinea and Northern Australia

### 3:22 minutes - Trees

In this picture you can see a forest **clearing** where a tree might have fallen and left a gap in the **canopy**. More light than usual can reach the forest floor when this happens and help the plants in the **undergrowth** grow better and more thickly than in shadier parts of the forest.

### 3:25 minutes - Orchids

There are many different kinds of **orchids**. They are found in all parts of the world and you may be able to buy one in a supermarket and grow it at home. Orchids may grow in the soil, on rocks or on other plants (these are **epiphytes** like the **bromeliads** seen earlier). Many orchids rely on just one type of **insect** to **pollinate** it (move **pollen** from one **flower** to another so that **seeds** can grow). If the insect is not present the plant cannot **breed**. The flowers of some orchids only last a few hours but the flowers of others may last for up to six months.

### **3:27 minutes - Bird of paradise**

There are forty two different types of **birds of paradise** and they all live in this region. Most are very brightly coloured. They eat fruit and insects. The main predators are **birds of prey** and **snakes**. Both attack the **chicks** in their **nest**. Adults are rarely attacked by animals but have been **hunted** for their **feathers** by people. The feathers are used to make decorations such as headdresses.

### **3:32 minutes - Cassowaries**

**Cassowaries** usually live on their own. A male bird may have a large area (1700 acres) of rainforest as its **territory**. Its mate visits to nest and rear **chicks**. Cassowaries eat mainly fruit but take a wide range of other food including **frogs, rats, mice, insects** and **snails**. The bird cannot **fly** but it can run at speeds of over 30 miles per hour. **Crocodiles, dingoes** and **pythons** are **predators** but the cassowary can kick out at them with a foot that has **sharp claws**.

### **3:36 minutes - Tree kangaroo**

The **tree kangaroo** is different from the more familiar **kangaroos** that live on the ground. It has a longer **tail** to help it keep its balance and its feet have **pads** of rough skin and long nails to help it grip as it climbs. Tree kangaroos are **herbivores** – they feed on leaves, fruit, flowers and nuts. The predators of the tree kangaroo are **eagles, owls** and **pythons**. If they come close the kangaroo will first remain very still. If the predator comes closer the kangaroo will make a ‘fft fft fft fft’ call. If the predator comes even closer the kangaroo may leap out of the tree and run as well as it can across the ground.

### **3:43 minutes - Duck billed platypus**

The **duck billed platypus** is famous for being one of the few **mammals** that lays **eggs**. The eggs are laid in a **burrow** and when they hatch the babies are fed on milk like all mammals. The platypus is a **carnivore** and feeds by searching stream and river beds for **shrimps, crayfish, worms** and **insects**. Its predators include the **water rat**, a large lizard called the **goanna** and **birds of prey** such as **eagles** and **owls**.