



OUR FORESTS AND JUNGLES

Forests and jungles touch our lives every day. They have done for millions of years, since the world's first peoples used them to get shelter, food, water, and firewood.

Today, 300 million people still live in forests and over one billion people depend on them for their livelihood. Forests cover almost one third of our planet's land area and well over half of the species found on land live in forests.

There are many kinds of forest on our planet, but they all contain a delicate balance of plants, animals, fungi and bacteria. Forests provide us with many resources, including food, paper, building materials, chocolate, medicines, and even the air we breathe. Forests make rainfall and filter freshwater. Most importantly, they are the lungs of our planet, and soak up carbon dioxide and other greenhouse gases that cause climate change.

WHAT'S HAPPENING TO FORESTS?

Forests are under threat. Every year 8.8 million hectares of natural forest are cut down – that's an area the size of a football field every second. Forests are being cleared for agriculture, often to grow food for animals such as pigs and poultry. In many parts of the world, illegal logging is leading to damage or loss of healthy forests. Many protected tree species are being over-harvested, and the wood is sold to be used for buildings and furniture. Around the world, wood is still used by more than a quarter of the world's people for cooking and heating – and the world population is growing.

Forests are naturally resilient, and areas cleared of tree cover can spring back to life if given a chance, even after huge forest fires. In fact, natural fires started by lightning may seem to be a terrible thing for forests, but actually often allows them to grow back stronger and to support a bigger variety of animals and plants than if the trees just kept growing. Some pine trees are adapted to frequent fires, and have cones that only open to release seeds in the heat of a fierce fire. The ash after a fire is filled with nutrients and perfect for new plants and trees to grow in the space left by the trees that have burned to the ground.

Vegetation recovering in conifer forest after a fierce forest fire in Kings Canyon National Forest, California, USA.





Great Hornbills fly vast distances in search of fruit, and deposit seeds along the way. This spreading of seeds helps the forests of the Western Ghats in India thrive.

FORESTS FOR THE FUTURE

We should all think carefully about how we use wood and the products made from it. It is best to use reused or recycled materials first and then if, we buy new, to ensure that the supply is from a responsibly managed source. One way to verify this is to choose products with an FSC label which shows that it comes from a well-managed forest where removal of trees for timber is done in a way that allows the forest and its inhabitants to continue to thrive for the future.

We also need to help forests recover by allowing areas that have lost tree cover to become forested again, especially where this connects fragmented pieces of forest into landscapes covered in trees. We know that forests are resilient and can recover if we let them. Doing this will ensure that amazing wildlife has a home, while we still have the benefit of wood and other forest products from well managed forests now and in the future.

SEASONAL FORESTS

Forests located far from the equator experience extreme changes in temperature and length of daylight hours each year due to the tilting of the earth that takes them closer to, or further from, the sun. This means that the species living in these forests are used to dealing with change and can recover from difficult conditions or damage. In many places, including Western and Central Europe, East Asia and the Eastern United States, many forests are 'deciduous'. This means that the trees shed their leaves every year in the Autumn, so that they avoid damage caused by cold and snow. Other seasonal forests consist of mainly conifer trees, such as the pine forests of Eastern Russia. Conifer trees are evergreen trees that have scale or needle shaped leaves with a waxy coating that helps them cope with extremely cold or dry conditions. This allows them to have leaves all year round, though the oily coating to the leaves can mean that they can burn very quickly if there is a forest fire.

FRAGMENTATION

Unfortunately, human activity can cause damage to forests from which they are less able to recover, and which can make life difficult for the wildlife that live there. When forests are completely cleared to make space for farmland, the amount of forest is decreased and what remains may become split into smaller separate pieces. These smaller fragments of forest may not be able to support wildlife that a large forest can. This splitting of forests into smaller areas is known as 'fragmentation', and is one of the biggest threats to forests globally. They are being cut into pieces by farms, but also by roads, rail tracks, pipelines and pylons.

Less than a quarter of the world's forests are part of large unbroken expanses of trees where large animals such as tigers and bears have enough space to hunt or forage for the food they need to survive. A single grizzly bear may need 1,000 square kilometres (385,000 square miles) to itself. These animals also spread seeds in their droppings, so they are an essential part of the forest ecology. Predators like the Siberian Tiger keep deer populations under control, which stops overgrazing from damaging the forest ecosystem. Fragmented forest cannot support these large animals.

Plantation forests (areas of land planted with trees specifically to provide timber) can be carefully managed so that less pressure is put on natural forests. Well managed plantations close to natural forest can protect and expand the habitat for wildlife, and brings many of the same benefits to the environment that natural forests do.

Boreal Forest in winter, Haines, Alaska, USA.





Forests absorb carbon from our atmosphere and store it in their trunks, roots and the soil, helping slow climate change.



Forest fires seem destructive, but large healthy forests are resilient and can recover stronger than ever.

Large forest predators control populations of plant eating animals that can prevent new growth, but need big areas of continuous forest.



Existing and newly planted forests can be managed sustainably so that they provide wood without areas needing to be cut down.





MEET THE LOCALS: THE RING-TAILED LEMUR

The ring-tailed lemur is found only in the dry forest and bush of southern Madagascar, which is a large island in the Indian Ocean with a unique ecosystem resulting from being cut off from the rest of the world for so long. The ring-tailed lemur is a large primate with a distinctive tail with alternating black and white rings. Ring-tailed lemurs are sociable and live in groups of around 17 members. Although they are very good climbers, ring-tailed lemurs spend a third of their time on the ground foraging for food. They roam long distances to find leaves, flowers, bark, sap, and small invertebrates to eat. When the lemurs travel over ground, they keep their tails in the air to ensure everyone in the group is in sight and stays together.

Sadly people are destroying the forest in Madagascar that is home to these lemurs and many other beautiful creatures that cannot be found anywhere else. Trees are cut down to be turned into charcoal and so that the land can be used for farming by local people who have little option due to poverty. These ring-tailed lemurs are therefore classified as 'endangered', and seventeen kinds of lemur have already become extinct because of the loss of their forest habitat. This is having another effect on the forest ecosystem. Some of the trees have evolved to rely on large lemurs that would eat their fruit and then spread the seeds in their droppings. The kinds of lemur still alive in the forest are not big enough to eat the fruit from those trees, so no more of those kinds of trees will grow to replace the ones that are standing now when they reach the end of their lives.

JUNGLES

The forests with the most plentiful and diverse wildlife are the jungles near the equator (the imaginary line around the middle of the planet), where they do not experience the seasonal changes that are felt in the North and South due to the tilting of the earth on its axis. This rich biodiversity is a result of the constant warmth and wetness of tropical rainforests, where the trees are leafy all year round, there are no big changes in temperature due to seasons and nature is fully active all year round. Jungles have different levels – each providing habitat for different species. A small area of jungle can be home to a huge amount of wildlife, from the forest floor up to the thick canopy. In the Amazon rainforest, 2.5 sq km of jungle can be home to more than 50,000 insect species, and some types of tree may only be found in one small area where they have evolved.

The unchanging temperature and constant warmth of the jungle mean that some species are only used to those conditions, and are not able to cope if their habitat changes. This means that when human actions have an impact on a jungle it can cause serious problems for the wildlife living there. Lots of species in jungles have developed relationships that mean they depend on each other for their survival. This means that if one species is damaged it can also cause problems for other species in the same part of the jungle – or even in other areas.

THE WORLD'S GREATEST RESOURCE?

All forests clean the air we breathe, breathing in carbon dioxide and releasing oxygen. This process, called 'photosynthesis', happens faster in the wet heart of tropical rainforests than anywhere else on our planet. Jungles also regulate our climate. Like giant sponges, they soak up water through their roots and return it to the atmosphere through their leaves. This moisture is carried in the air to other parts of the world and falls as rain, so the jungle actually ensures that other parts of the planet have the water that is needed for life to survive. Jungles give us precious resources. Much of the food we eat – coffee, avocados, bananas, lemons, oranges, cacao beans to make chocolate, cashews, peanuts, pineapples and papayas were first found in the jungle and are now farmed for our enjoyment. Many medicines that we use today were discovered by studying chemicals produced by plants and trees growing in jungles. Scientists believe there are many more discoveries to be made that could help us stay healthy in the future.

DISAPPEARING JUNGLES

Jungles are perhaps the most endangered habitats on earth. In the Amazon basin we are currently losing an area of rainforest around the size of 3 football pitches every minute because it is being destroyed by humans for timber,



Forests and jungles play an important role cleaning, storing and distributing freshwater. Over three quarters of the freshwater humans can access comes from forests, and air that passes over large forest areas produces much more rainfall than air that has passed over little vegetation.

farmland, and to clear the way for roads. Destroying the jungle harms us all. People lose their homes, security and income. Animal species face extinction, and the planet becomes more vulnerable to climate change.

SAVING THE JUNGLE

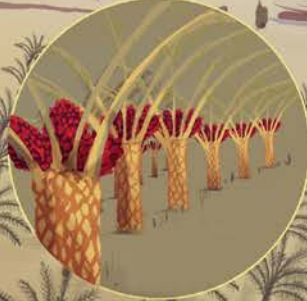
Local communities can be supported and empowered to allow them to protect the jungle and make a living without destroying jungle for farmland or timber. People who have used these jungles for generations can continue to do so, while ensuring that the amazing wildlife that shares the jungle – and future generations of people – can do so too.

Some crops can be grown in the jungle without removing the trees. By planting lots of different crops under the canopy (fruit, nuts, coffee etc) an area of jungle can provide food and income for local communities without any areas ever being cut down completely. This creates a more natural ecosystem than on a farm growing a single crop, so fertilisers and pesticides are not needed. There are also techniques that can enable some harvesting of trees for timber and other resources from the jungle in a way that allows it to stay healthy and recover, and all the different crops together provide enough to support farmers. This is called Agroforestry.

We depend on jungles but we risk losing them if we don't act now. We can use the jungle in a way that does not destroy it for future generations. We can all make sure that we live in a way that protects our precious planet. One way is by making sure that we ensure that products we buy are not produced at the expense of the jungle.



Jungles release billions of tons of water vapour, creating clouds that reflect sunlight and transport water around the planet.

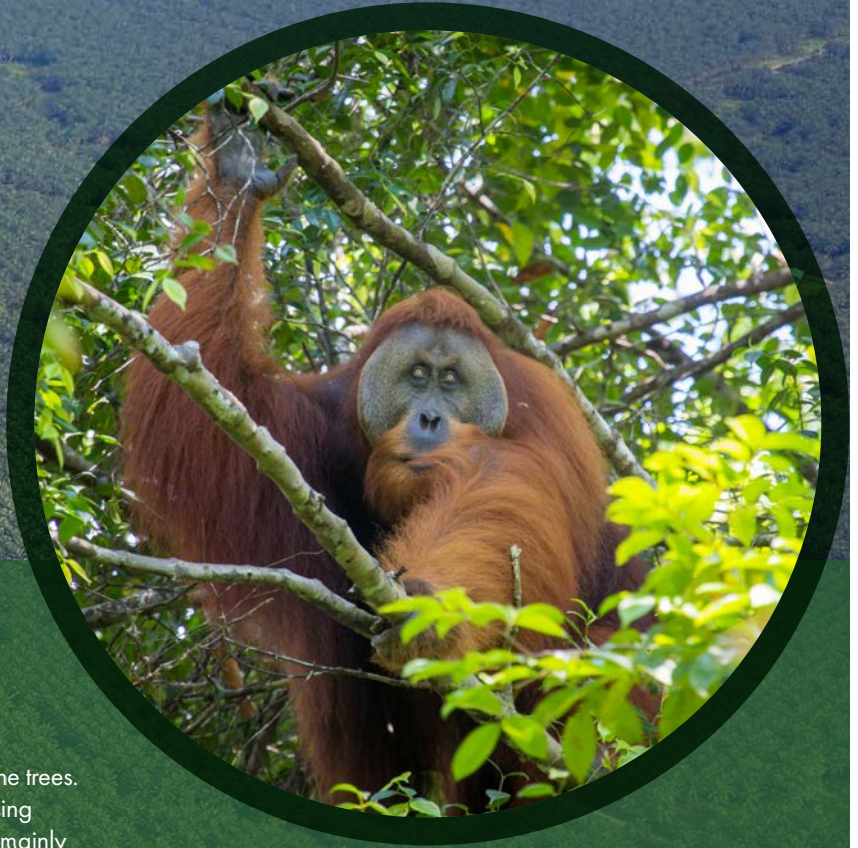


Jungle is being destroyed to clear land to grow palm oil and other crops, but we could use land that is already cleared instead.



A jungle contains many connected 'micro-worlds' filled with wildlife that may not exist anywhere else.





ORANGUTANS AND PALM OIL

Orangutans are the world's heaviest tree-climbing mammal and they live their lives almost entirely in the trees. They move by swinging from one tree to another using their long arms and grasping hands and feet. They mainly feed on fruit and are known as the gardeners of the forest because they spread seeds which helps new trees grow.

Unlike other primates, orangutans do not live in large groups. Adult males are usually found alone, and females live with their offspring. They give birth about every five years, usually to one baby. There is such a lot for young orangutans to learn about survival in the forest that they usually stay with their mother until they are about 7 years old, longer than any other animal. In the wild, orangutans can live up to 50 years.

The greatest threat to the orangutan's survival is the loss of their jungle habitat as trees are chopped down for timber and land cleared to make way for palm oil plantations. This vegetable oil is used in more than half the packaged products in our supermarkets, from ice cream and margarine to soap and lipstick.

There are two species of orangutan – the Bornean and Sumatran – and they are both very similar. They once

lived in jungles across Southeast Asia but today they live on just two islands, Borneo and Sumatra, and are critically endangered. A century ago, there were probably 230,000 orangutans – around four times as many as there are today.

To help save orangutans we can all try to make sure that the palm oil in the products we buy has been grown responsibly in a way that has not harmed animals or the environment. Environmentally-friendly palm oil is certified by the **Roundtable on Sustainable Palm Oil** or **RSPO**. Look for the label when buying products containing palm oil. If your favourite products contain palm oil and don't have the RSPO accreditation you could write to them and explain why you want them to ensure that they use palm oil that is deforestation free.



FACILITATOR INSTRUCTIONS

KEY MESSAGES

PROBLEMS FACING FORESTS & JUNGLES

- Deforestation due to farming and timber
- Fragmentation of habitat due to roads, railways, pylons and pipelines
- Loss of species specific to one area when areas of jungle are cleared
- Loss of large predators from forests due to fragmentation, unbalancing the ecosystem

SOLUTIONS

- Forests can recover on their own if we give them time and space
- Planting more forests can protect those that remain and the animals that need them to survive
- Agroforestry and sustainable timber extraction can ensure we benefit from forests without destroying them

SDGs LINKS

Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

<https://www.un.org/sustainabledevelopment/biodiversity/>

Ensuring a healthy and productive future for our grasslands also contributes

to other SDG goals, including the following:

GOAL 2: Zero Hunger

GOAL 12: Responsible Consumption and Production

GOAL 13: Climate Action



GUIDED DISCUSSION PROMPTS

Use these prompts to generate a class or small group discussion based on the Our Forests & Jungles briefing, or videos on ourplanet.com.

Have you ever spent time in a forest or woodland? What did you do in the woodlands? What was special about the place? If they have not done so, would you like to visit a forest? Why?

Allow the young people to begin by discussing their own experiences and impressions.

Imagine you are in the jungle. What is this place like? What are some of the sounds that you might hear here? What might you see here? What would it feel like? Would you like to visit the jungle? Why?

To create a relaxed group setting, give young people time to talk together in pairs, before sharing their thoughts with the whole group.

Why are forests important?

Encourage young people to come up with as many ideas as they can. Many foods and medicines come from jungles, they clean the air we breathe, they regulate the earth's climate, they are home to millions of plant and animal species, as well as millions of people.

What animals, plants and insects may live in forest or jungle?

Mammals such as lemur, bear, deer, squirrels, raccoons, badgers etc. Minibeasts like butterflies, beetles, spiders, flies, bees, wasps etc. Birds such as nuthatch, rooks, eagles, great hornbill etc. Amphibians such as newts, reptiles such as snakes etc. Plants such as ivy, wildflowers, bracken etc. Fungi and lichens, and of course trees!

Think of all the ways that forests have touched your life today. What have you used that comes from a forest?

Encourage young people to come up with as many ideas as they can, including furniture, building materials for floors, doors and window frames, fruits, paper, tissues, clean air, pencils, toys, musical instruments, boats, medicines, fences, lollipop sticks, rulers – the list goes on!

What does the ice cream that you get from the supermarket have to do with the future of orangutans?

This question gives the opportunity to look at the impact of deforestation. With younger young people it may help to provide extra clues by writing the following flash cards: palm oil, orangutan, jungle, ice cream, plantation. Ask young people what the links between the cards are.

What threats are forests and jungles facing?

Clearing for farming land and housing, fragmentation, logging for timber, increased noise and light pollution from human settlements.

What can we do to protect the jungles and forests?

At this point it is important to give young people the chance to think about the importance of sustainability and preserving forests for future generations. We can all think carefully about how we use forests. Small steps, such as saving paper, can make a big difference. Any wood or paper bought for school or home should be FSC.

Helping local communities to care for and protect the rainforests.

It is important to help young people understand that they can do something about the challenges that our planet faces. Buying sustainable palm oil products and telling parents, shopkeepers and others in their community why it is important.

ACTIVITIES

ACTIVITY IDEA	SUGGESTED AGE	SUBJECTS
Create a collage display from magazines and materials showing all the everyday products and benefits that we get from forests and jungles on one side, and all the wildlife that depend on forests and jungles for their survival on the other.	6 – 8	Art Geography Science
Carry out a 'sensory walk' in a woodland, with young people closing their eyes to experience the woodland through the other senses, guided by a partner. They should be encouraged to close their eyes or put on a loose blindfold and explore the textures, smells, sounds and feel of the environment. Discuss afterwards if they noticed anything that they had not before.	7 – 14	Outdoor learning Geography Science
Explore a woodland or forest with a notepad and/or camera, and try to identify as many different species as possible.	7 – 14	Science Geography Outdoor learning
Identify different tree species in a woodland and explore the differences between them. Make bark rubbings, outlines of leaf shapes, seed types and field sketches to illustrate how they are similar and different. Discuss why the trees may be so different, and how their different characteristics may help them in different ways.	7 – 11	Art Science
Make a diorama of a jungle habitat.	6 – 8	Art
Recreate the sights and sounds of a forest or jungle using dance, voice and percussion.	6 – 8	Music
Write a riddle about a jungle animal. Think about where the animal lives, how it moves, what it eats and its size, colour etc. What makes this animal special? Read the riddle out and see if others can guess the animal.	7 – 11	Literacy Science