

# 5.1 What are the characteristics of a rainforest?

Forests that grow in constantly wet conditions are called rainforests. A rainforest is an example of a biome (a community of plants and animals spread over a large natural area). Rainforests are located wherever the annual rainfall is more than 1300 millimetres and is evenly spread throughout the year. While tropical rainforests are the best known, there are also other types.

## Tropical rainforests

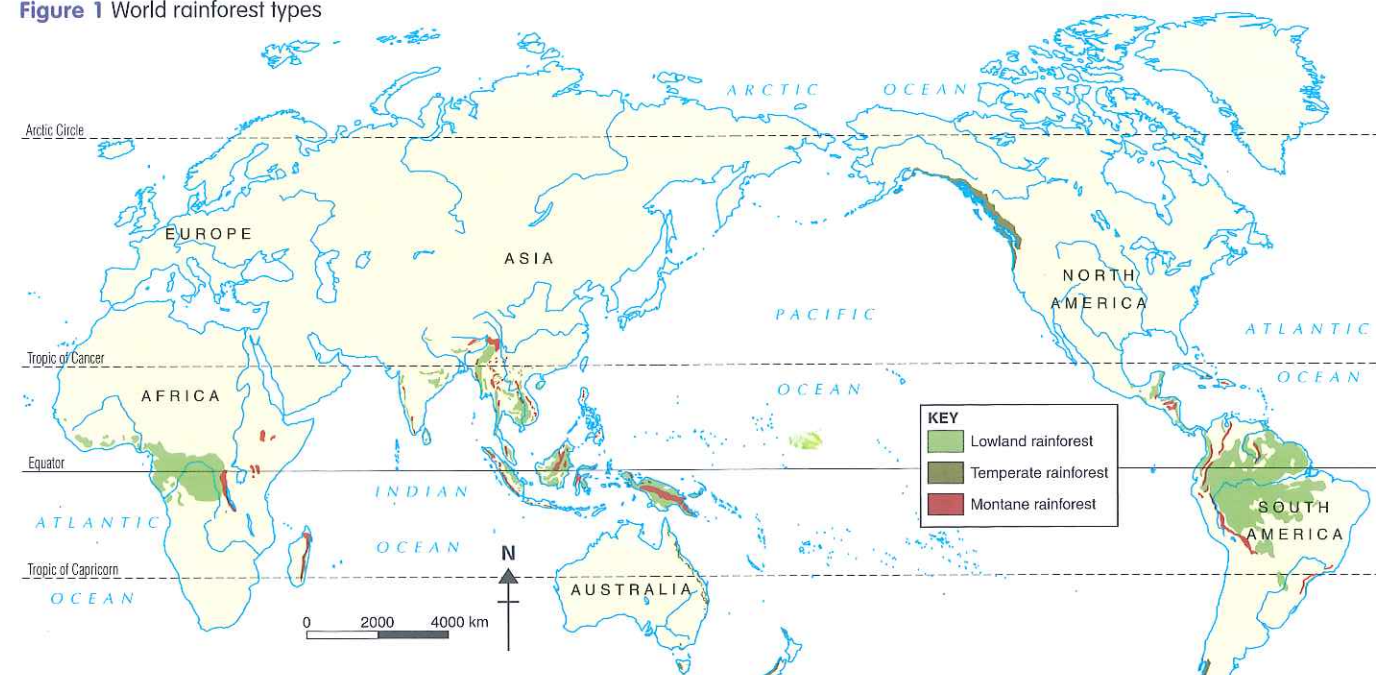
Plants flourish in humid, moist tropical rainforests, which support a huge number of plants and animals — perhaps as many as 90 per cent of all known **species**. Poison-dart frogs, birds of paradise, piranha, tarantulas, anacondas, Komodo dragons and vampire bats are all found in tropical rainforests.

Tropical rainforests that occur in the mountains, 1000 metres or more above sea level, are called montane rainforests. Other tropical rainforests are known as lowland rainforests (see figure 1).

## Lowland tropical forest

Lowland tropical rainforests form the majority of the world's tropical rainforests. They grow at elevations generally below 1000 metres. Trees in lowland forests are usually taller than those in montane forest and include a greater diversity of fruiting trees. These attract animals and birds adapted to feed on their fruits. These rainforests are far more threatened than montane forests because of their accessibility, soils that are more suitable for agriculture and more valuable hardwoods for timber. Lowland forests occur in a belt around the equator, with the largest areas in the Amazon Basin of South America, the Congo Basin of central Africa, Indonesia and New Guinea.

Figure 1 World rainforest types



## Rainfall

Rainforests thrive in the hot and wet conditions experienced in the **equatorial** regions of the world. Most of the time the rainfall is extremely heavy, caused by thunderstorms. These heavy downpours, called **convictional rainfall**, result in very hot and humid conditions.

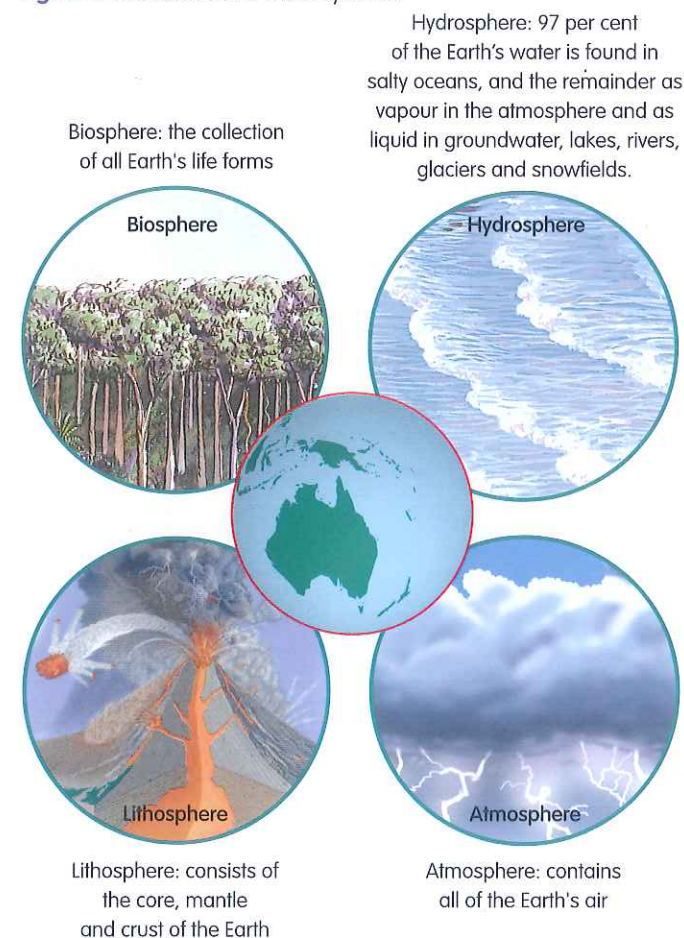
## Temperate rainforests

The large area of the globe between the tropics and the polar regions (areas within the Arctic and Antarctic circles) is called the **temperate** zone, and rainforests can grow there too. Temperate rainforests occur in North America, Tasmania, New Zealand and China. Giant pandas, Tasmanian devils, brown bears, cougars and wolves all call temperate rainforests home.

## Physical processes of a rainforest

Rainforests are the result of the interaction between the Earth's four main systems or spheres. For example, the trees in a tropical rainforest (biosphere) rely on high levels of precipitation (hydrosphere), warm temperatures (atmosphere) and stability provided by

Figure 2 The Earth's four main systems



soil (lithosphere) to thrive. Energy from the sun is stored by plants (biosphere). When humans or animals (biosphere) eat the plants, they acquire the energy originally captured by the plants.

## Activities

### REMEMBER

- 1 What conditions do rainforest **environments** thrive in?
- 2 What are the differences between montane and lowland rainforest **environments**? What causes these **changes** in rainforest type?
- 3 Describe the distribution of rainforests around the world. Think about in which continents and between which latitudes they are found, the size and **scale** of them, and whether they are continuous or scattered.

### EXPLAIN

- 4 Why are lowland rainforest **environments** more threatened by human activity than montane rainforests?
- 5 Why are montane forests often called 'cloud forests'?

### DISCOVER

- 6 Refer to figure 1.
  - a Use an atlas to help you name six countries in the Asia-Pacific region that contain rainforests.
  - b What type of rainforest **environment** is found:
    - i in north-eastern Australia
    - ii along the western coastline of Canada?

### THINK

- 7 Refer to figure 2. List Earth's four spheres. Give several examples of features in each sphere.
- 8 List some Earth sphere interactions from your own daily activities.
- 9 Why are rainforest **environments** able to support a large range of animals and plants?

**convictional rainfall** heavy rainfall as a result of thunderstorms, caused by rapid evaporation of water by the sun's rays

**equatorial** near the equator, the line of latitude around the Earth that creates the boundary between the northern and southern hemispheres

**species** a biological group of individuals having the same common characteristics and able to breed with each other

**temperate** describes the relatively mild climate experienced in the zones between the tropics and the polar circles



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