

ORIGINS OF RAINFOREST

Gondwana

The island continent of Australia has not always been shaped the way it appears on modern maps.

Over 300 million years ago a single super continent of Pangea existed. About 200 million years ago it split to form two super continents: Laurasia and Gondwana. Laurasia split off to form today's northern continents of Europe and Asia.

All of today's southern hemisphere continents, including Australia were joined together as the southern supercontinent of Gondwana.

Around 110 million years ago Gondwana rainforests developed from conifers and primitive flowering plants and spread across the supercontinent.

Around 90 million years ago Gondwana began to split apart into separate continents. Rainforests of Gondwana became divided from each other and evolved separately. Many primitive plant species were preserved in Australia, which finally separated from all its neighbours around 45 million years ago. As Australia drifted northwards, dramatic changes in climate occurred and plant and animal life adapted to new environmental conditions.

About 12 million years ago, Australia became drier and cooler. Gradually grasslands and woodlands replaced the dense Gondwana rainforests. Scattered areas of rainforest remained only in a few areas.

To see an animation showing how Gondwana broke up go to this site:-

<http://homepages.see.leeds.ac.uk/~eargah/Gond.html>

What is rainforest?

Rainforest is generally a vegetation community of dense, moisture loving humidity-dependent plants. There is a range of rainforest types, which vary in their environmental conditions (tropical, subtropical, warm temperate, cool temperate, littoral and dry rainforest).

Rainforest is characterised by its structural complexity, involving:

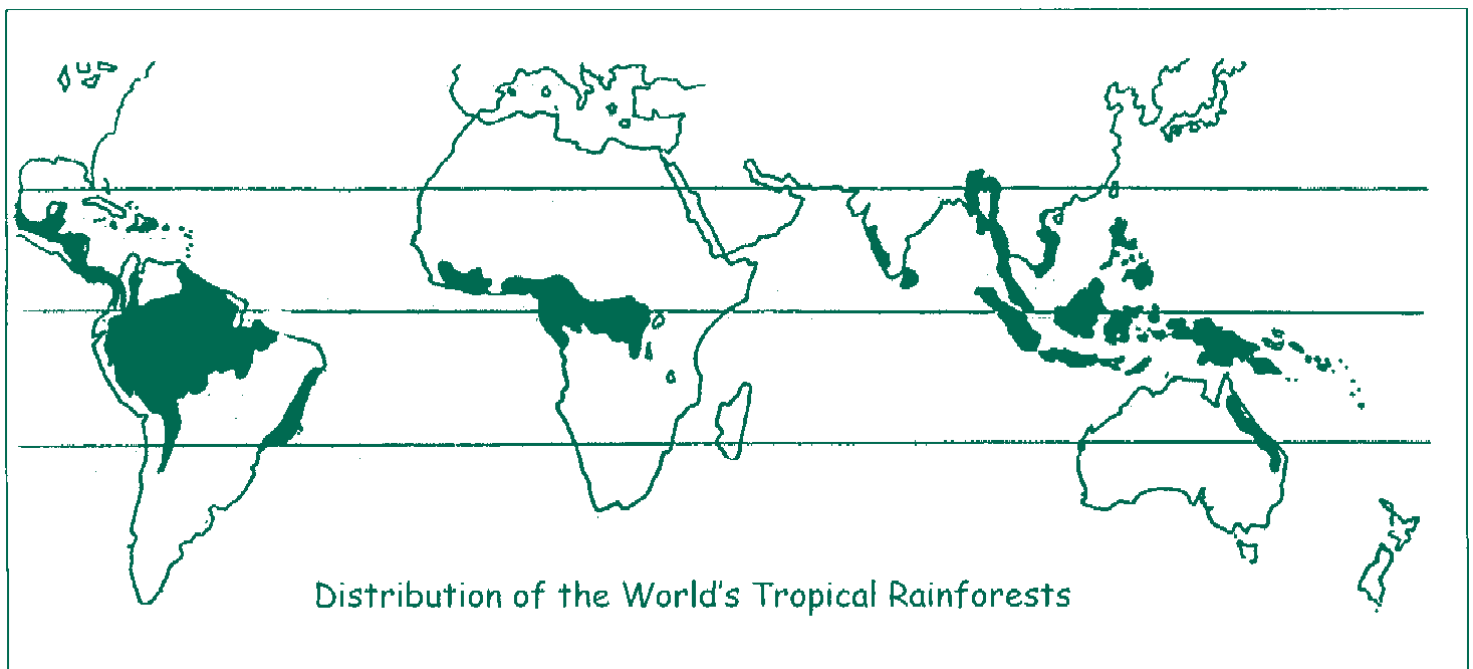
- many tree species,
- a complex canopy,
- structural adaptations and special growth forms,
- prominent vines and ferns,
- and often the presence of epiphytes.

Plants within this vegetation community have adapted to obtain and make maximum use of the limited sunlight. Some types of rainforest require a high annual rainfall of at least 1200mm per year, whereas dry rainforests grow in areas with only 600mm. The structure of the rainforest typically consists of a canopy cover of 70 per cent or more, formed from the interlocking crowns and layering of two or three strata of trees.

Rainforests are classified according to their structure and floristic composition, under a broad system based on climate. Classification features include leaf size, number of tree layers and special growth forms.



Rainforest canopy from the air, showing 70% cover.



Australian rainforests

Today rainforest covers only 0.25 percent of Australia, yet contains half of Australia's plant species and one third of Australia's mammal and bird species. Rainforest is restricted to limited areas with sufficient rainfall and more fertile soil.

There are many types of rainforest in Australia, varying mainly with rainfall and latitude. **Tropical** and **subtropical rainforests** occur in northern and eastern Australia in wet coastal areas as far south as New South Wales. **Dry rainforests** are a variation of tropical and subtropical rainforests; they occur in pockets protected from frequent fire in sub-coastal and inland areas across northern and eastern Australia.

Monsoon rainforests occur in northern Australia in the seasonally dry coastal and sub-coastal regions. Some of the tree species in these rainforests are semideciduous, often losing their leaves at the end of the dry season.

Temperate rainforests occur in eastern and southeastern Australia. Warm temperate rainforests grow in New South Wales and Victoria and **cool temperate** rainforests in Victoria and Tasmania, with a few outliers at high altitude in New South Wales and Queensland.



New South Wales rainforests

Nowhere in the world other than Eastern Australia is there such an extended strip (over 3000 kilometres) of a more or less continuous series of rainforest types. New South Wales occupies a key position in this series, having within it considerably varied environments.

In New South Wales rainforest is often referred to as 'brush' or 'scrub'. The four main types are subtropical, warm temperate, cool temperate and dry, the latter being semi-evergreen. A fifth is littoral rainforest, named as a result of its proximity to the ocean on coastal sand dunes and headlands - it has features of both the subtropical and dry rainforest types.

Rainforest around Port Macquarie

In the Port Macquarie - Hastings region, rainforest occurs mainly in locations with good topographic shelter and fertile soil, where moisture loss through evaporation by dry westerly winds and the destructive effects of fire are minimised.



Subtropical rainforest at Sea Acres

Some more rainforest facts

- Australia has destroyed 80% of its rainforest in just 200 years since European settlement.
- 50% of the world's foods originated from rainforest plants.
- 40% of pharmaceuticals have been made from rainforest plants.
- Almost 70% of the world's species are found in rainforests.
- 200,000 square kilometres of the world's rainforests are being destroyed every year. (That's equal to the size of Sea Acres every minute).
- Rainforests now cover less than 6% of the world's land area.
- These products all originated from rainforest plants – spices, latex, resins, waxes, dyes, oils, fibres, rattan.
- These foods come from rainforest plants - sweet potato, sugar cane, bananas, coffee, tomatoes, avocados, vanilla, chocolate, spices and many nuts.
- Medicines from the rainforest include- quinine to fight malaria, digitalis to treat heart failure, aspirin for pain control and blood thinning. Many modern cancer drugs come from rainforest species. Laxatives, cough mixtures, antibiotics and antiseptics are also derived from rainforest plants and herbs.
- The following are all treated from medicines from the rainforest - bronchitis, hypertension, rheumatism, diabetes, muscle tension, arthritis, glaucoma, dysentery and tuberculosis.
- Many new medicines to help mankind are yet to be discovered from the rainforest.

