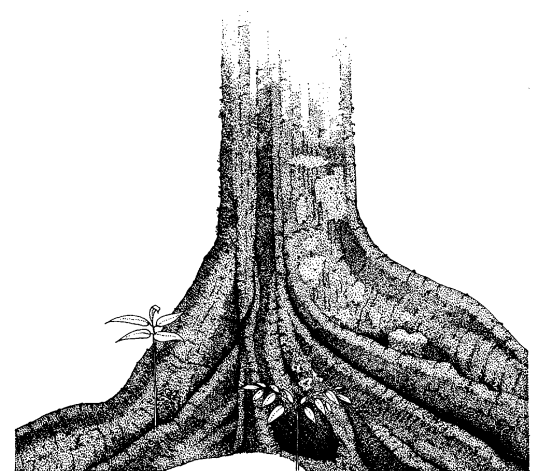


Tropical Factsheets

Climax and pioneer plants

- Although it looks stable, rainforest is continually changing. Old trees fall and others take their place.
- Only 1% to 5% of light reaches the forest floor and vegetation is sparse. Apart from ferns, palms and other plants which have adapted to low light levels, there are some spindly seedlings.
- These plants may be 20-year-old trees. Botanists call these trees **climax species** and have nicknamed the little saplings '**Oskars**'. (*Oskar was a little boy who didn't grow up in the novel **The Tin Drum** by German author Gunter Grass*). Without sunlight these saplings are unable to reach their potential as magnificent trees.
- But there's hope - all they need is a gap in the canopy. Perhaps an old tree or even a branch will fall and give them a chance. Suddenly energy in the form of sunlight is available for growth. The race to the canopy is on!
- If there's no gap, Oskars eventually **die** after a couple of pointless decades of waiting. In time, more will germinate to take their place.
- If the gap is large, different types of trees join the race. They are called **pioneer species**. Unlike the Oskars, **pioneers** can't germinate or grow in low light.
- Instead their seeds remain viable in the soil waiting for a **burst of sunlight**. Then they sprout and take off! These **pioneer** saplings grow much faster in bright light. They are **sprinters** whereas climax Oskars are **long distance runners**.
- This is not all bad news for the **climax** species. **Pioneers** can grow in dry, hot, sunny conditions which **Oskars** dislike.
- Some have deep tap roots and can reach nutrient and water stores beyond the reach of shallow-rooted climax species. They prevent soil erosion and create shady damp conditions where more little Oskars can germinate.
- Usually pioneers **live fast and die young** after about 20-50 years.
- Eventually a small gap opens and a patient Oskar on the forest floor has a chance at last. These climax species grow slowly but live much longer — for **hundreds of years**. It is these trees which make a **mature, well-established rainforest**.



Oskar Seedlings