

Root Systems

Mangroves have unusual root systems. They provide the trees with food, water and oxygen.

Apart from coping with salt, mangroves also face common problems of being water - logged and living in unstable and oxygen-deficient soils.

In the unstable, sometimes muddy soil, an extensive root system is necessary to keep the trees upright. Mangroves are shallow rooted with the main mass of roots within the top two metres. Mangroves don't grow deep taproots because of the poor oxygen levels below the surface.

Since mangroves often live in oxygen-deficient soil, they have special ways of getting oxygen needed for their growth. Their roots are exposed to the air at low tide and small special breathing cells, called lenticels draw air in for the tree to breath. They are connected to spongy tissue within the roots. A danger to the breathing roots is the possibility of them being covered with accumulating sediment. Under normal conditions sediments build up at a rate of 1.5 –2 cm a year. To avoid being buried roots can grow up vertically. Oil, however, can be fatal. If lenticels are covered in oil, the plant can no longer draw in air and the plant may suffocate.



Yellow Mangrove

Different mangrove species have developed different architectural designs to keep their roots in the air. They grow in different zones according to their salt tolerance, ability to survive at different water levels and differing food requirements.

