



Plants in Place

Plants need sunlight, water, carbon dioxide, minerals and oxygen to survive. However, not all environments can provide an 'ideal' level of these things, so over time plants evolve and adapt to cope with their environmental conditions.

Desert plants tend to have waxy coatings to prevent water being lost from their leaves and to reflect heat and sunlight. Some desert plants (particularly cacti) have fleshy, succulent tissue to store water for the dry times. Plant cells that release water called stomates tend to be sunken in desert plants. This protects stomates from drying winds and less water is lost from the plant. Some desert plants also have hairy leaves to trap evaporated water and stop wind from further drying the leaf.

Rainforest plants on the forest floor have plenty of water but struggle for sunlight. They have large areas of foliage and often grow towards the Sun to absorb as much light as possible. To keep the leaf fairly dry, many rainforest plants have a 'drip tip' that channels water quickly off the leaf.

Mangroves live in an environment where salty water levels rise and fall around their roots daily. If their roots get too waterlogged, plants can die. Mangrove trees grow prop roots that peak above the loose, muddy soil to avoid suffocation. Mangrove plants also deal with the salty environment by blocking salt from entering their roots or excreting salt through the base of their leaves.

More Information

Australian National Botanic Gardens Rainforest Adaptations
(open Adobe Acrobat on your computer first, then use this link)
<http://www.anbg.gov.au/education/pdfs/rainforest-teachers-2003.pdf>

Missouri Botanic Gardens
Desert Plants <http://mbgnet.mobot.org/sets/desert/index.htm>
Plant Adaptations (examples) <http://mbgnet.mobot.org/sets/rforest/index.htm>

Micscape article – Plant adaptations
<http://www.microscopy-uk.org.uk/mag/indexmag.html?http://www.microscopy-uk.org.uk/mag/articles/anne1.html>

Physiological Adaptation of Mangrove plants
<http://www-personal.usyd.edu.au/~nicksk/course/mangrove/phys.html>

Mangrove Trees http://www.naturia.per.sg/buloh/plants/mangrove_trees.htm

South Florida Museum of Natural History: Mangroves
<http://www.flmnh.ufl.edu/fish/southflorida/mangrove/adaptations.html#anaerobic>

Cooperative Research Centres
Coastal Zone, Estuary and Waterway Management <http://www.coastal.crc.org.au/>
Tropical Rainforest Ecology and Management <http://www.rainforest-crc.jcu.edu.au/>