



Adaptation: The gradual change of the characteristics of a species over a long period of time, in response to a changing climate, predation, food resources or other environmental factors. This can eventually lead to new species emerging. For example, the evolution of eucalypt species was driven by a drying climate, which favoured plants that adapted through reducing their need for water, such as by having tough, dry and thin leaves. If the rate of change in the environment is too rapid for an individual or species to adapt to it, the individual, population or species as a whole may become threatened. This has happened to many native Australian mammals due to the introduction of pest species such as cats and foxes.

Aspect and Site: **Aspect** refers to the position of the plant in relation to sunlight and slope, the direction it faces, whether it is in the path of winds or exposure to the elements, and its nearness to buildings. **Site** refers to the general broad area where the plant or plants are planted. **Site** influences the quantity and types of trees, shrubs or grasses to be planted in terms of the terrain, soil, nearness to the sea and settlement, availability of water.

Biodiversity: The variety of living things. This includes not just the array of different plant and animal species found on the planet, but also the variation between different ecosystems, populations and individuals at the genetic level that may (though not always) be seen as physical differences. A high level of biodiversity is an indication of a healthy living system. The current rate of the loss of biodiversity is internationally recognised as a major threat facing the future of life on our planet.

Bush Regeneration: A technique for restoring areas of natural bushland that have been impacted by weeds and other detrimental factors. The principal involves gradual hand-removal of invading weeds, starting at the boundary between the weeds and healthy bushland. The technique promotes natural regeneration of native plants from seed, although follow-up work is also required to remove new weeds that have also begun to grow from weed-seed remaining in the soil.

Bush Tucker (also Bush Food): The wealth of edible plants and animals native to Australia that provided all of the nutritional needs of Indigenous people for thousands of years. This includes herbs, spices, mushrooms, fruits, flowers, seeds, vegetables, birds, reptiles, fish, mammals and insects native to their area. Bush food is still eaten today by many Indigenous people and is becoming popular in modern Australian cuisine.

Clear Felling: The cutting down and clearing of native trees and all other vegetation in one operation to make way for farms, settlements and, in forestry practice, to create new areas for logging by burning the cleared land and then sowing seed for trees.

Climate: The long-term average weather conditions (rain, temperature, wind etc) that prevail in a particular region. These conditions are contributing factors to the types of plants that can grow, along with geology, soil, terrain, aspect, altitude, fauna etc. Climate alone does not determine plant species, although over time it inevitably affects species and drives adaptations.

Climate Change: Any long-term significant change in the “average weather” that any place on earth experiences. Average weather includes average temperature, rainfall and wind patterns. Climate Change involves a shift in the average state of the atmosphere over timescales ranging from decades to millions of years. These shifts can be caused by changing processes on earth, external forces such as meteor impacts and variations in sunlight intensity, and more recently human activity. Currently, climate change refers to the rapid changes, including global temperature rises, which are occurring since reliable measurements began in the late 1800s, due to increased atmospheric CO₂ from human activities.

Conservation: The practice of ensuring our natural resources like waterways, soils, plants, animals and their natural habitats are made available for future generations to use and enjoy. Conservation recognises that things will change over time but nothing in terms of balance and native species must be lost.

Custodianship: Taking an ongoing responsibility for, and care of, someone or something. In relation to natural habitats, the role of a custodian/caretaker ensures that the site involved has all the essentials of life to promote a healthy ecosystem – ie a suitable supply of water, sun, air and soil (including suitable nutrient composition) as well as protection from threats such as weeds, feral animals, insect and disease attack, erosion, pollution, trampling and extremes of weather (fire, frost, wind etc). For natural sites, especially where subject to unnatural impacts such as from urban dwellings, custodianship should include monitoring of the site to identify impacts, and may include techniques such as bush regeneration. For a planted site (such as for Schools Tree Day) custodianship may include monitoring, weeding, protection from pests (eg use of tree guards), minimising impacts from people and vehicles through defining clear tracks, watering and applying mulch to help the plants establish.

Decomposer: An organism that obtains its food source from other dead organisms, and in doing so carries out the natural process we call decomposition. Examples include fungi, bacteria, worms, millipedes and slaters.

Desertification: The degradation of land through human activity that leads to an increase in arid conditions and a loss of biodiversity. The primary reasons for desertification are overgrazing, over cultivation, water harvesting, deforestation, increased soil salinity, and global climate change.

Drought: A deficiency in the water supply in a region over an extended period of time (months or years). This occurs when a region receives consistently below average rainfall.

Ecological Community: All the interacting organisms living together in a specific habitat. All the living things within a given community have similar ecological needs, such as availability of water, sunlight, shade, type of soil, altitude, aspect etc. Examples include rainforest, swamps, woodlands, heath, estuaries and coastal dunes.

Ecosystem: All the components within a specific environment that interact to create and sustain ecological communities. This includes both living and non-living components, such as soil, rocks, living and decaying plant matter, fauna including invertebrates and micro-organisms. The essence of an ecosystem is that all of the components are inter-dependent, relying on each other for the resources essential to growth and reproduction.

Ecosystem Services: The resources and processes occurring in natural systems for which there is human demand. This is relatively new term used to identify, quantify and give economic value to all of the services that humans rely on nature providing for “free”. This includes natural resources and processes that provide human needs such as clean air, drinking water, nutrients for agriculture, pollination of crops etc.

Endangered Trees: Trees that may die out completely due to people’s activities or a change in climate. One tree in Australia that was threatened for a long time was the Wollemi Pine. The Wollemi Pine belongs to the ancient Araucariaceae species, thought to be over 200 million years old. Until 1994, the Wollemi Pine was believed to have become extinct about 2 million years ago, but was recently rediscovered in a gorge 150 km north-west of Sydney, Australia. There are less than 100 mature trees in the wild, making it one of the rarest species in the world. One way of ensuring the survival of this species was to cultivate the seeds and propagate thousands of trees and sell them widely to nurseries and to people for their private gardens.

Erosion: The loss of soil from an area due to wind, water and animal activity (eg a lyrebird moves 12 –16 tonnes of soil per year!). Erosion is a natural process and Australia has an ongoing process of erosion and deposition. Human activity can lead to an increase in erosion, especially through land clearing and the development hardened surfaces such as roads, rooftops and driveways. The resulting impact is often concentrated in particular areas through stormwater run-off.

Habitat: The natural environment where an organism lives and which provides all the essentials of life for including food, water, shelter, and for animals nesting resources and opportunities for breeding. Habitat destruction through human activity is a major threat for many native plants and animals, leading to an increasing number becoming endangered or even extinct (see also Land Clearing).

Iconic Trees: Trees that have a positive image because they are well known for some reason. The Lone Pine tree, which grew at Gallipoli during World War I, for example made up part of the scene of a famous battle. The seeds were brought back to Australia and planted in many places around the country as a link to this historic battle.

Land Clearing: Involves the destruction of native vegetation and habitats and is the number one threat to the survival of animal and plant species in Australia. Over 87% of native vegetation in Australia has been cleared since European settlement. Scientists estimate that 7.5 million birds and over 100 million reptiles are killed in Australia every year due to land clearing. Animals die either during the process or shortly after due to the impact of losing their habitat and becoming exposed to threats such as predators.

Local Provenance: The term used to describe native plant populations that naturally occur in a given area. The plants growing in a specific area will have adapted to the local conditions over a long period of time, and as a result will differ from the same species that has adapted to grow in an area with different local conditions. For example, a hairpin Banksia growing on the coast will be different (at the genetic level) from that growing in the mountains. Local Provenance is of particular value in retaining the characteristics developed in response to specific local conditions, such as disease resistance. Preserving local provenance populations, therefore, is an important way of protecting biodiversity.

Native Plants (also Indigenous Plants): Plants that naturally occur in a particular region or country. The plants have adapted to the conditions in a particular area over a long time period. These conditions may include climate, soil, availability of water, aspect etc. It is best to plant local provenance native plants because this will make their survival more likely and they will provide the best habitat for local native wildlife.

Newly introduced plants to a place are known as exotic plants, or sometimes weeds. **Plant Communities:** A mixture of plants growing together to form part of a balanced ecosystem. The plants will have similar ecological requirements, such as availability of water, type of soil, altitude, aspect etc and can also influence the conditions to favour other types of plants. For example, a canopy of rainforest trees provides shelter from the sun for shade-loving plants, such as ferns, that grow on the forest floor. When planting native species, it is best to aim for a balance between trees, shrubs, grasses and groundcovers such as is seen in the natural local environment, and to plant local provenance species where possible.

Propagation: Plant propagation is the practice or process of increasing the number of plants grown, whether by fertilisation of flowers to produce seed or spore, or by taking cuttings (or other tissue) from a parent plant to produce identical plant offspring.

Rehabilitation: Restoring a degraded area of land to its natural condition by reducing or removing threats and impacts such as weeds, pollutants and feral animals. Rehabilitation techniques may include bush regeneration, feral animal control and fencing the land off from grazing animals. Planting may need to be carried out in some conditions, such as where the soil or native seed-bank has been lost. It is best to use seed collected locally in these circumstances, so as to maintain local provenance. The aim of rehabilitation is to returning the area to a healthy ecosystem similar to its original natural character.

Regeneration: The regrowth of an area of bushland following an impact that has led to a loss of vegetation. This may be the result of a natural event, such as fire, or through human activity such as grazing or land-clearing. While too frequent burning through human impact is detrimental to the health of many ecosystems, the regeneration that takes place after naturally occurring wildfires can be seen as a process of rebirth, with the effects of the fire promoting germination of new seed and increasing sunlight and nutrient (in the form of ash), proliferation of grasses creating enhanced resources for wallabies, wombats etc, prolific flowering seasons which ensure abundance of nectar and seed resource for gliders, birds and bats. Fires can also lead to the creation of hollows as suitable nesting sites for owls, gliders. In human-managed regeneration projects, fire may also be used to promote growth where appropriate and where a native seed bank still exists in the soil.

Resource: Anything that is of use. In human terms, resources include natural assets that are typically given an economic value (such as metals, minerals, oil, forests and fish stocks). Increasingly, the systems and processes found in nature which we rely on as humans (but have only recently started to identify their economic value) are being recognised as a specific type of resource, termed Ecosystem Services. Any living thing can be considered in terms of the resources it requires. For example, a koala requires a number of particular species of eucalypt trees for its food resources.

Revegetation: The regeneration of an area that has undergone a loss of plant material, whether by natural or human-assisted means. Where the natural soil still exists it is best to allow natural regeneration to occur using a variety of methods to get things going, such as weed removal or even fire. Planting should only be carried out where there is no regeneration potential.

Riparian Zones: The area of land on the banks of a creek, river, or lake, including wetlands and floodplains. Riparian zones generally have a great diversity of animals and plants compared to surrounding habitats. The vegetation found in riparian zones ranges from aquatic plants to mature trees and understorey vegetation.

Salinity: The level of salt in the soil. Some plant species can tolerate a high level of salt but others cannot. The salt content in the soil and the availability of water influence the type of plants that will grow in a certain place. The clearing of mature bushland, and/or its replacement with shallow rooted crops and pastures, has caused dryland salinity in many locations across Australia. Dryland salinity happens when there is too much water in the groundwater table, which causes underground salt to rise to the surface. Close to 5.7 million hectares are at risk or affected by salinity in the Murray-Darling Basin for example, an area that supports 40% of Australian farms and contains around 75% of our irrigated land.

Sustainability: An ecological, economic, social and political concept. A sustainable society is one that meets the needs of the present without compromising the ability of future generations to meet their own needs. In the Science domain, issues which need to be considered for sustainability include: the conservation of biodiversity and ecological integrity; dealing judiciously with risk, uncertainty and irreversibility ensuring appropriate valuation of environmental assets. In the SOSE or the HSIE KLA it relates to the integration of environmental and economic goals in Government and institutional policies and activities; social equity (both intragenerational and intergenerational); and community participation.

Sustainable Timber Harvesting: Ensuring that, when trees are cut down for building and other purposes, there are sufficient numbers retained in the forest at various stages of growth to ensure the ongoing health of the ecosystem. For example, a number of mature trees are required as they provide nest hollows for a range of native animals. The practice also includes leaving vegetation on steep hillsides and around streams intact, so as to prevent soil erosion and maintain healthy stream-life.

Threatened Species: Any species of animal, plant or fungi etc that is in danger of becoming extinct. In Australia, threatened species are protected by law, and plans are put into practice to reduce the chance of them becoming extinct. There are also a number of endangered Ecological Communities listed in Australia, a reflection of the fact that a single species does not live in isolation but as part of an ecosystem with complex interactions. The main threats to threatened species and endangered ecological communities are human impacts, including land clearing and climate change.

Weeds: A weed is a plant out of place. Introduced plants that are not (yet) invasive are called exotics. Introduced plants that have become invasive are called weeds, pest plants or feral plants. A weed can survive and thrive in its new environment, often because diseases and other factors (such as grazing by native animals) that keep native plant growth in check do not afflict it. Weeds displace native vegetation and wildlife, since they do not provide the best habitat for native wildlife.

Wood Chipping: The act and industry of chipping wood for pulp or processed wood products. Timber is converted to woodchips and sold, primarily, for paper manufacture.

*Definitions for terms featured in this glossary focus on meanings related to the growing, planting and maintenance of plants, and the natural world.