
Glossary

Abundance: in the ecological sense, usually refers to the number of individuals or amount of biomass of a species in a particular ecosystem.

Adaptive management: a systematic process to improve decision-making in the face of uncertainty. The process involves a cycle of planning, taking action, evaluating the results of the action, and then taking further action based on the results of that evaluation.

Arid: used to describe an area or climate that lacks moisture.

Assemblage: a collection of plants and/or animals that characteristically occur within a particular environment or habitat.

Biodiversity: the variety of all living organisms on Earth and at all levels of organisation, including the diversity of the genetic material within each species and the diversity of ecosystems that those species make up, as well as the ecological and evolutionary processes that keep them functioning and adapting.

Biodiversity footprint: see footprint.

Biodiversity hotspots: see hotspot.

Biodiversity offsets: see offsets.

Biomass: the total mass of living matter within a given area or volume.

Biomes: regions with similar weather and similar types of plants and animals. There are land biomes (sometimes called habitats), such as rainforest, desert and temperate forest, and freshwater and marine biomes, such as wetlands and coral reefs.

Bioregions: areas smaller than a biome (see above) that are geographically distinct areas of land with common characteristics, such as geology, landform patterns, climate, ecological features, and plant and animal communities. Australia has been formally mapped into 89 distinct bioregions.

Biota: the living organisms of a particular region, habitat or geological period.

Community: similar to the human variety, when used in an ecological sense a community is a unit composed of a group of plants and animals occupying a particular area, usually interacting with each other and their environment.

Connectivity: a measure of the extent to which components of a network (such as habitats or areas of native vegetation) are connected to one another, and the ease with which they can make these connections.

Corridor: an area of habitat that connects wildlife populations that would otherwise be separated by barriers such as roads, development, or open land.

Dispersal: the permanent movement of a species to a new area, such as when an animal moves from the place where it was born to a breeding site, or from one breeding site to another, or when seeds are redistributed away from the parent plant. Dispersal is not to be confused with migration, which is a seasonal rather than permanent movement.

Distribution: the geographical range of locations in which a species is found.

Diversity: the number and variety of the item of interest (such as species, genes or

ecosystems) found within a specified region. When we measure diversity we have to take account of not only the number of different species present in a place, but also their proportional abundances. For example, a sample of three species of similar abundance is more diverse than a sample where one of the three species is much more abundant than the others.

Ecological footprint: see footprint.

Ecosystem: a biological community made up of a complex network of interactions between organisms and their physical environment.

Ecosystem functions: biological processes that control the transfer of energy, nutrients and organic matter through an environment; examples include primary production, by which plants use sunlight to convert inorganic matter into new biological tissue; nutrient cycling, by which nutrients are captured, released and then recaptured; and decomposition, by which dead plants and animals are broken down and recycled into inorganic matter.

Ecosystem services: the important benefits that humans gain from healthy functioning ecosystems. The benefits are often classified into four kinds: (1) supporting services are ecosystem services, such as seed dispersal, that are necessary for the production of other services; (2) provisioning services involve the production of resources, such as fresh water; (3) regulating services are those that lessen undesirable environmental change, such as pest and disease control; and (4) cultural services are the benefits people obtain from ecosystems through recreation, aesthetic and spiritual experiences.

Endangered: used to describe a species that is facing a very high risk of extinction in the wild in the near future.

Endemic: when a species is endemic to an area, we mean it is found only in that area, although it did not necessarily originate there.

Endemism: the extent to which a species is restricted to a particular area. High endemism means the species is found in few, if any, other locations.

Environmental footprint: see footprint.

Environment Protection and Biodiversity

Conservation Act 1999 (EPBC Act): the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places – defined in the EPBC Act as matters of national environmental significance (www.environment.gov.au/epbc).

Extinction: a state when there is no reasonable doubt that the last member of a species has died. This can refer either to total extinction across the species' range or extinction in part of the range where the species was previously present.

Fire regime: the pattern, frequency and intensity with which fire occurs in a given area over an extended period of time.

Footprint: the total impact, both direct and indirect, that the human population has while going about our daily lives, including the impacts of what we build and consume, and of the waste we produce.

Fragmented/fragmentation: the dividing of habitat areas into smaller areas or fragments, separated by different habitat types. This can be a result of geological processes or changes in climate that slowly alter the environment, or human activity, such as changes in land use.

Genera: the plural of the taxonomic category genus, which is a group of species exhibiting similar characteristics. For example, red kangaroos (*Macropus rufus*) and eastern grey kangaroos (*Macropus giganteus*) are individual species that are members of the same genus, *Macropus*.

Genomics: the study of structure, function, evolution and mapping of an organism's genetic material.

Gondwana: the name of the southern hemisphere supercontinent that broke into pieces during continental drift to yield today's South America, Antarctica, Australia, New Guinea, New Zealand, India, Africa, and much of Indonesia.

Habitat connectivity: see connectivity.

Habitat fragmentation: see fragmentation.

Hotspot: area with a high diversity of plants and animals, and highly valued ecosystems.

Indigenous Protected Areas: an area of Indigenous-owned land or sea where traditional owners have entered into an agreement with the Australian Government to promote biodiversity and cultural resource conservation. Indigenous Protected Areas make up over a third of Australia's National Reserve System.

Invasive species: a species occurring outside its usual range, and which adversely affects the economy, environment, or human health. Note that there are species regarded as native to Australia that are becoming invasive, but these are still a comparatively minor part of the invasive problem.

Larvae: the active, immature forms of an animal.

Larval: used to describe something in an immature state.

Lineage: a group composed of species that have descended from a common ancestor; a branch on an evolutionary tree. A lineage might have one or many living 'tips' on the branch; for example, platypus and echidnas are two 'tips' of the monotreme mammals' lineage.

Marine Protected Area: parts of the ocean that are managed primarily for the conservation of their ecosystems, habitats, and the marine life they support.

Metagenomics: the study of genetic material recovered directly from environmental samples (such as soil or water samples) and, therefore, containing many kinds of organisms. It is revolutionising the study of microbial communities, but it has potential uses for multicellular organisms as well.

National Reserve System: Australia's network of protected areas. It is made up of Commonwealth, state and territory reserves, Indigenous lands, and protected areas run by non-profit conservation organisations, as well as ecosystems protected by farmers on their private working properties.

Naturalised: used to describe species that are capable of surviving and reproducing in an area where they are non-native.

Novel ecosystem: a combination of biological entities, patterns and processes that has not occurred before (generally having arisen because of human activities), and has no naturally occurring counterparts.

Offsets: conservation activities undertaken in one location, which have been paid for by a developer to compensate for negative biodiversity impacts in another location.

Plankton: organisms that drift in the water column because they are incapable of swimming against a current (including algae, bacteria, and many animals such as crustaceans and jellyfish).

Radiation: the diversification by evolution of species from a common ancestor. For example, 'the radiation of marsupials in Australia' refers to the tremendous diversity of marsupial groups and the many species within each group.

Rangelands: vast open landscapes of native grasslands, shrublands and woodlands.

Remnant: patches of original native vegetation remaining after conversion of landscapes to other uses, such as agriculture or urban settlement.

Resilience: the capacity of an ecosystem to recover from shocks, such as fire, flood and clearing.

Richness: in ecology, refers to the number of species in a given area.

Riparian: describes the area on the banks of a river or other body of water.

Savanna: a flat grassy plain in tropical and subtropical regions, with few trees.

Speciation: the formation of new and distinct species in the course of evolution, usually by the division of a single species into two or more genetically distinct species.

Species: a group of living organisms consisting of similar individuals capable of exchanging genes or interbreeding. Species is the taxonomic rank below genus and above subspecies.

Species abundance: see abundance.

Species diversity: see diversity

Species richness: see richness.

Status: of a species, usually refers to whether there are still living members and how likely it is to become extinct in future.

Surrogate: a substitute. In this book it refers particularly to an environmental variable used to represent some other variable that is more difficult to measure.

Terrestrial: occurring on land, as distinguished from freshwater and marine ecosystems.

Temperate: a region or climate characterised by mild temperatures.

Threatened: denotes when a native species is at risk of extinction in the wild in the future.

Trend: the general direction in which a species' status is changing.

Tropics: the region between the tropics of Cancer and Capricorn; that is, the area between latitude 23°26' north and 23°26' south.

Weed: generally indicates a plant that is unwanted. In the context of biodiversity conservation, weeds and exotic plants are often used interchangeably.

Wet Tropics: a United Nations World Heritage-listed site stretching along some 450 km of the Queensland's north-east coast and consisting of approximately 8944 km² of tropical rainforest.