



**Reptile
Encounters**
wildlife up close

Definitions

Ecosystem

A system that includes all living organisms (biotic factors) in an area as well as its physical environment (abiotic factors) functioning together as a unit. An ecosystem is made up of plants, animals, microorganisms, soil, rocks, minerals, water sources and the local atmosphere interacting with one another.

Niche

The ecological role and space that an organism fills in an ecosystem. The ecological niche involves both the place where an organism lives and the roles that an organism does in its habitat. For example, the ecological niche of a sunflower growing in the backyard includes absorbing light, water and nutrients (for photosynthesis), providing shelter and food for other organisms (e.g. bees, ants, etc.), and giving off oxygen into the atmosphere.

Habitat

The location where an organism or a biological population normally lives or occurs, e.g. the body part of the host of a parasite as in the scalp of the host is the habitat of a head louse.

Biodiversity

The existence of a wide range of different types of organisms in a given place at a given time. The diversity of plant and animal life in a particular habitat (or in the world as a whole); a high level of biodiversity is desirable. Pertaining to the diversity and frequency of organisms in a given area.

Predator

An organism that preys upon other organisms for food. Many predators hunt and eventually kill their prey, such as lion preying upon a buffalo, mantis eating a bee, baleen whale consuming millions of microscopic planktons.

Prey

An animal that is hunted and killed by another for food.

Predation

In ecology, predation is a biological interaction where a predator (an organism that is hunting) feeds on its prey (the organism that is attacked). Predators may or may not kill their prey prior to feeding on them, but the act of predation often results in the death of its prey and the eventual absorption of the prey's tissue through consumption.

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Herbivore

An animal that consumes herbaceous vegetation. Any animal that feeds chiefly on grass and other plants; horses are herbivores; the sauropod dinosaurs were apparently herbivores. Animals that consume plant material as a source of obtaining energy.

Carnivore

An animal or plant (particularly insect- and invertebrate-eating plants) that requires a staple diet consisting mainly or exclusively of animal tissue through predation or scavenging. Examples of carnivores are lions, which consume up to seven kilograms of meat per day. In plants, the Venus flytrap is a well-known carnivorous plant.

Omnivore

An omnivore is an animal that can derive its energy and nutrients from a diet consisting of a variety of sources that may include plants, animals, algae and fungi. Omnivores often are opportunistic, general feeders which lack carnivore or herbivore specializations for acquiring or processing food, but which nevertheless consume both animal protein and vegetation. Rats and humans are omnivores.

Adaptation

The adjustment or changes in behavior, physiology, and structure of an organism to become more suited to an environment. According to Charles Darwin's theory of evolution by natural selection, the organisms adapt to their environment to become better fitted to survive and passing their genes on to the next generation.

Structural (Anatomical) Adaptation

A structural adaptation involves some part of an animal's body that improves its chances of survival, such as the size or shape of the teeth, the animal's body covering, or the way the animal moves. Some examples include: teeth – since different animals eat different things, they don't all have the same kind of teeth; body coverings – hair, scales, spines, and feathers grow from the skin and movement – animals find food by moving from place to place.

Physiological (Biochemical) Adaptation

An organismic or systemic response of an individual to a specific external stimulus in order to maintain homeostasis. A metabolic or physiologic adjustment within the cell, or tissues, of an organism in response to an environmental stimulus resulting in the improved ability of that organism to cope with its changing environment.

Unlike structural adaptation which involves transgenerational adjustment, physiological adaptation is generally narrow in scope and involves response of an individual to a particular, usually narrow, range of stimuli. Examples of physiological adaptation are tanning of skin when exposed to sun over long periods and the ability of certain organisms to absorb nutrients under low oxygen tensions.

Behavioural Adaptation

Behavioural adaptations include activities that help an animal survive. They can be learned or innate. Examples are: Social behaviour – some animals live by themselves, while others live in groups and behaviour for protection – the opossum plays dead.

Innate behaviour

This is behavior that an animal is born with. It is usually inflexible, a given stimulus triggering a given response. A salamander raised away from water until long after its siblings begin swimming successfully will swim every bit as well as they the very first time it is placed in the water. Clearly this rather elaborate response is “built in” in the species and not something that must be acquired by practice.

Learned behaviour

Behavior that is more or less permanently altered as a result of the experience of the individual organism. Your dog begging for scraps at the dinner table is learnt behaviour.

Reproductive adaptation

A peculiarity of the reproductive mechanism of a species that results in it being better fitted to its environment, for example, prolonged seed dormancy or sequential hermaphroditism in clown fish.

Symbiosis

A long-term relationship between two different species.

Commensalism

A form of symbiosis between two organisms of different species in which one of them benefits from the association whereas the other is largely unaffected or not significantly harmed or benefiting from the relationship.

As a form of symbiosis, the organisms are typically found in close proximity despite of their differences in speciation. Although they thrive in the same area there is no major competition between them. A common example is the symbiosis between the epiphyte orchids on branches of trees. These orchids benefit from the trees by the trees rendering support to the orchids. The orchids can gain more light and air in this way. The trees are neither drastically harmed nor benefiting from the orchids attached to their branches.

Mutualism

A symbiotic relationship between individuals of different species in which both individuals benefit from the association. In this type of symbiosis, both organisms of different species rely on one another for nutrients, protection and other life functions, hence, they are usually found living in close proximity. The relationship between the clown fish and the anemone is an example.

Parasitism

A form of symbiosis in which one organism (called parasite) benefits at the expense of another organism usually of different species (called host). The association may also lead to the injury of the host. An example of parasitism is the association between the parasitic tapeworms and the vertebrate hosts.

Camouflage

Structural adaptation that enables species to blend with their surroundings; allows a species to avoid detection by predators or prey.

Mimicry

The resemblance which certain animals and plants exhibit to other animals and plants or to the natural objects among which they live, a characteristic which serves as their chief means of protection against predators. Mimicry can be both a structural and behavioural adaptation—often both simultaneously as in the case of stick insects.

Hibernation

The cessation from or slowing of activity during the winter; especially slowing of metabolism in some animals. The metabolism is slowed down and expenditure of energy is therefore reduced. This is done mostly due to the fact that food sources are scarce at this time of the year, and if the animal did not hibernate, it would more than likely have a greater expenditure of energy looking for food than the energy gained by finding it.

Torpor

Torpor is a state of decreased physiological activity in an animal, usually by a reduced body temperature and metabolic rate. Torpor enables animals to survive periods of reduced food availability. A torpor bout can refer to the period of time a hibernator spends at low body temperature, lasting days to weeks, or it can refer to a period of low body temperature and metabolism lasting less than 24 hours, as in “daily torpor”. It thus usually lasts for a shorter time period than hibernation.

Circadian Rhythms

A daily cycle of activity observed in many living organisms.

Nocturnal

Nocturnality is an animal behaviour characterized by activity during the night and sleeping during the day. The common adjective is “nocturnal”.

Nocturnal creatures generally have highly developed senses of hearing and smell, and specially adapted eyesight. Such traits can help animals like the *Helicoverpa zea* moths avoid predators. Some animals, such as cats and ferrets, have eyes that can adapt to both low-level and bright day levels of illumination. Others, such as bushbabies and (some) bats, can function only at night. Many nocturnal creatures including Sugar Gliders and some owls have large eyes in comparison to their body size in order to compensate for the lower light levels during the night.

Diurnal

Diurnal animals, like the Red kangaroo, crocodiles and Kookaburras, are active during the daytime.

Crepuscular

Crepuscular animals are those that are active primarily during twilight (i.e. dawn and dusk). Crepuscular animals include some kangaroos, wombats, and rats.
